WIND POWER SECTOR OF UKRAINE 2019

UWEA UKRAINIAN WIND ENERGY ASSOCIATION

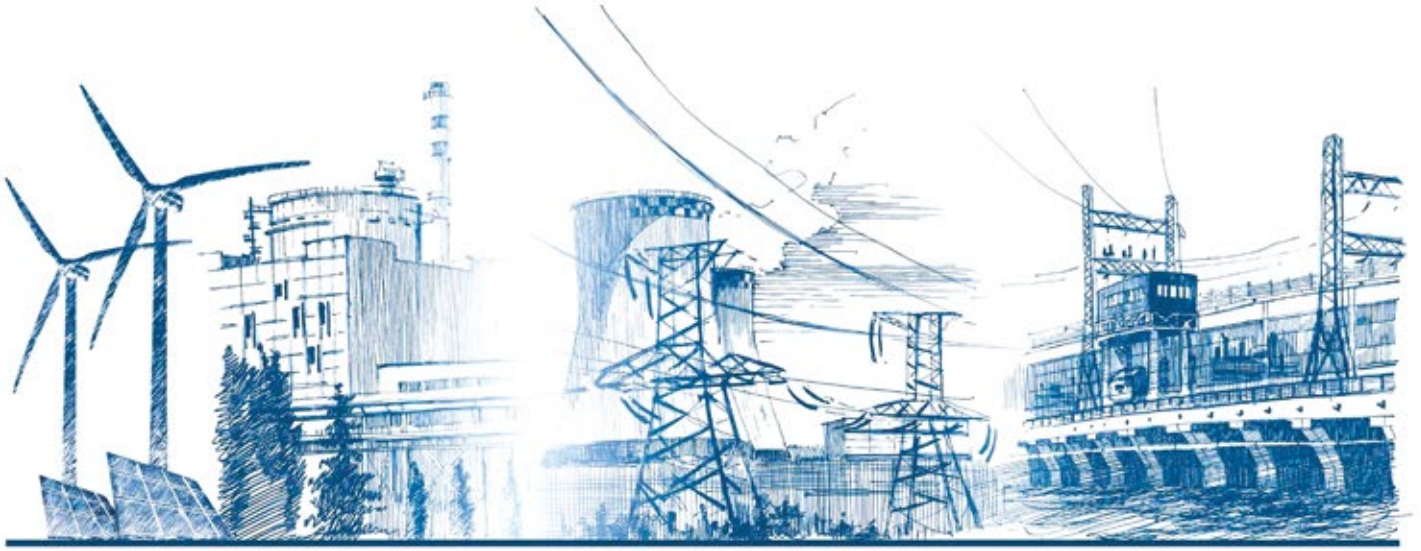
ВСЕУКРАЇНСЬКА ЕНЕРГЕТИЧНА АСАМБЛЕЯ

НОРМАТИВНЕ ТА ТЕХНІЧНЕ ЗАБЕЗПЕЧЕННЯ ЕНЕРГЕТИЧНОЇ ГАЛУЗІ

Під загальною редакцією к.т.н. І. В. ПЛАЧКОВА
та А. Є. КОНЕЧЕНКОВА

ВІДНОВЛЮВАНА ЕНЕРГЕТИКА ВІТРОВІ ЕЛЕКТРОСТАНЦІЇ

ОРГАНІЗАЦІЯ ЕКСПЛУАТАЦІЇ ТА ТЕХНІЧНОГО ОБСЛУГОВУВАННЯ. НОРМИ ТА ВИМОГИ



СОУ ВЕА.600.1.1/01:2017 ВІДНОВЛЮВАНА ЕНЕРГЕТИКА

СТАНДАРТ ОРГАНІЗАЦІЙ УКРАЇНИ

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WIND POWER SECTOR OF UKRAINE 2019

MARKET OVERVIEW

Ukrainian Wind Market Overview 2019 was developed by the Ukrainian Wind Energy Association in collaboration with SAYENKO KHARENKO Law Firm.

The reported statistics is based on official information published by State Agency on Energy Efficiency and Energy Saving of Ukraine, Ministry of Energy and Environmental Protection of Ukraine, National Energy and Utilities Regulatory Commission of Ukraine, NPC Ukrenergo, SE Guaranteed Buyer and on data supplied by the UWEA member-companies and Ukrainian Wind Energy Agency LLC.

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Public Union UKRAINIAN WIND ENERGY ASSOCIATION *(UWEA)* is the largest Renewable Energy industry association in Ukraine. It's a non-profit organisation that serves as the principal communication and cooperation platform for large-scale adoption of wind technologies in the country and to advance the "green" transformation of the Ukrainian energy system.

The UWEA founded in 2008 to protect the interests and support the activities of the Ukrainian wind energy market stakeholders, as of the end of 2019 unites more than 75 companies among which: wind farm developers and 100% of wind companies operating wind farms in Ukraine, equipment manufacturers and suppliers, utilities, construction companies, scientists and researchers, lawyers, NGOs, and others involved in the wind industry – one of the world's fastest growing energy industries, and ensures wind energy industry's interests on the national and international levels.

Throughout its history the Ukrainian Wind Energy Association has been closely cooperating with various national, regional and local authorities, and is a full member of the World Wind Energy Association and WindEurope.

Numerous awards and distinctions have proven high-level professionalism of the association. Thus, the UWEA has twice been recognized as the choice of the year – in 2017 it was awarded with the Honorary award "Choice of Ukraine 2017" and in 2019 – the Honorary award "Choice of the Country 2019".

Sayenko Kharenko enjoys global reputation as a leading Ukrainian law firm with an internationally oriented full-service practice. Founded in 2004, currently Sayenko Kharenko is one of the largest law firms in Ukraine. The firm specializes in complex cross-border and local matters and regularly handle the largest and most challenging transactions involving Ukraine. The firm provides legal services in all core practice areas, namely:

- Antitrust/Competition
- Banking and Finance
- Bankruptcy and Debt Restructuring
- Capital Markets
- Compliance and Investigations, Corporate and M&A
- Corporate Security
- Government Relations *(GR)*
- Intellectual Property, International Arbitration
- International Trade
- Labor
- Litigation
- Private Wealth Management
- Real Estate and Construction
- Tax, White Collar Criminal Defence

Sayenko Kharenko has introduced multiple new products in Ukraine and has contributed significantly to the development of multiple markets and industries. The clients especially value its practical and innovative approach and its ability to comprehend their needs and help achieve their strategic and business goals.

This has helped Sayenko Kharenko become the preferred legal counsel for largest multinational corporations, banks and other financial institutions, Fortune 500 companies, industrial groups, international public organizations, and individual business owners.

CONTENT

ACRONYMS AND ABBREVIATIONS

BioPP	Biomass Power Plant
CC	Complexity Category
CMU	Cabinet of Ministers of Ukraine
CSP	Concentrated Solar Power
DAM	Day-Ahead Market
DSO	Distribution System Operator
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EGC	Energy Generating Company
EU	European Union
GHG	Greenhouse Gas
GW	Gigawatt
HPP	Hydro Power Plant
IEA	International Energy Agency
IFC	International Financial Corporation
IDM	Intraday Market
IRENA	International Renewable Energy Agency
IPS	Integrated Power System
kW	Kilowatt
MC	Managing Company
MW	Megawatt
NBU	National Bank of Ukraine
NEURC	National Energy and Utilities Regulatory Commission of Ukraine
NPC	National Power Company
NPP	Nuclear Power Plant
PPA	Power Purchase Agreement
PSH	Pumped Storage Hydroelectric Power Plant
PSO	Public Service Obligation
PU	Public Union
PJSC	Public Join-Stock Company
PSPP	Pumped Storage Power Plant
RE	Renewable Energy
RES	Renewable Energy Source
SAEE	State Agency on Energy Efficiency and Energy Saving of Ukraine
SE	State Enterprise
SPP	Solar Power Plant
SACI	State Architectural and Construction Inspectorate of Ukraine
TC	Technical Conditions
toe	ton of oil equivalent
TPP	Thermal Power Plant
TSO	Transmission System Operator
UCG FEA	The Ukrainian Classification of Goods for Foreign Economic Activity
WWEA	World Wind Energy Association

WIND POWER SECTOR OF UKRAINE

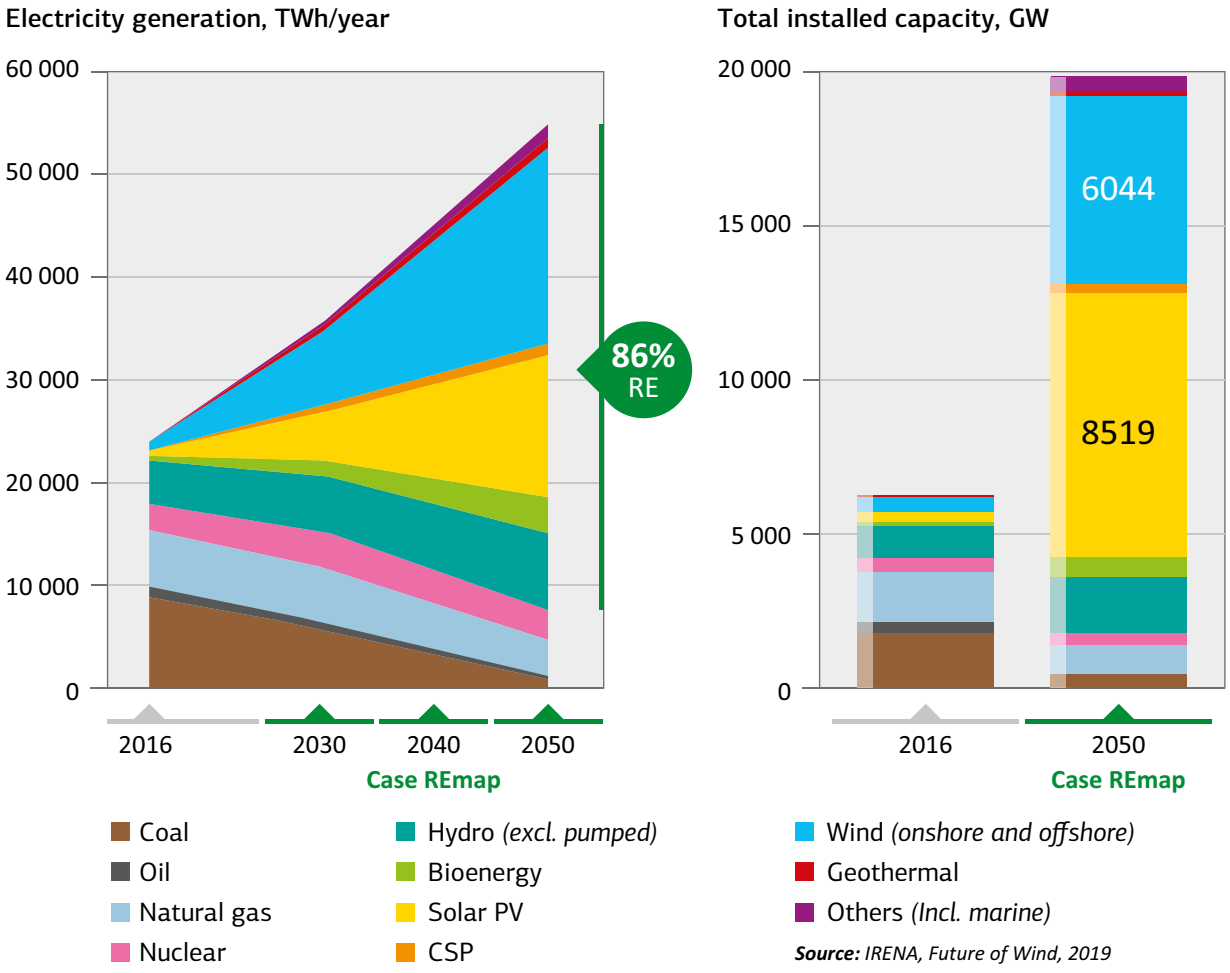
photo by Konstantin Brizhnichenko

1.1. ROLE OF WIND POWER IN GLOBAL ENERGY TRANSFORMATION

Achieving the Paris climate goals would require significant acceleration across a range of sectors and technologies. In its Global Energy Transformation report "Future of Wind" *(published in October 2019)* the International Renewable Energy Agency outlines the role of wind power in the transformation of the global energy system, specifically the growth of wind power deployments that would be needed in the next three decades to achieve the Paris climate goals.

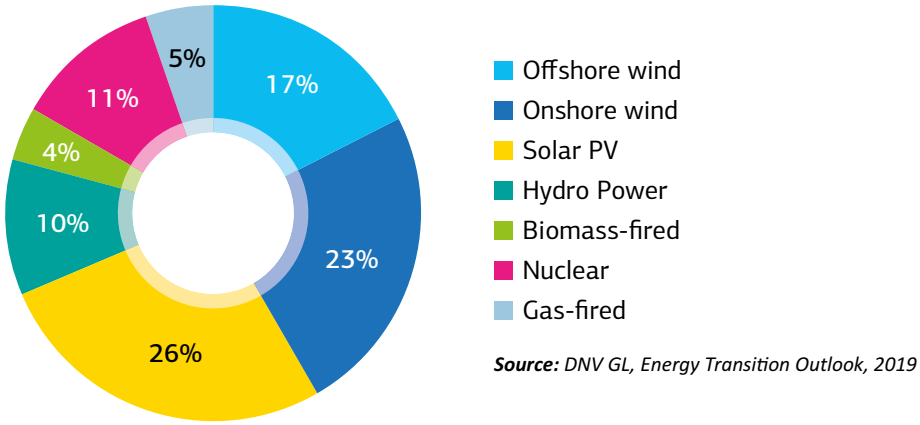
Among all existing low-carbon technologies, accelerated deployment of wind power, combined with large-scale electrification, would contribute to more than one-quarter of the total emission reductions needed *(nearly 6.3 Gigatonnes of carbon dioxide annually)* in 2050.

Figure 1.1.1. *Global electricity generation and installed power capacity in 2016-2050, forecast*



Source: *IRENA, Future of Wind, 2019*

Figure 1.1.2. *European electricity mix in 2050, forecast*



Source: *DNV GL, Energy Transition Outlook, 2019*

Wind power, along with solar energy, storage systems and other "clean" energy technologies *(for example, "green" hydrogen)* would lead the way to the transformation of the global electricity sector. IRENA also predicts that onshore and offshore wind energy will generate more than one-third *(35%)* of total electricity needs, becoming the prominent source of generation by 2050. The global cumulative installed capacity of onshore wind power plants will increase by more than three times by 2030 *(to 1,787 GW)*, and by nine times by 2050 *(to 5,044 GW)*, compared to the installed capacity of 542 GW in 2018. Also, according to the IRENA Report, the combined installed capacity of offshore wind power plants will increase almost tenfold up to 228 GW by 2030, and by 2050 it will approach 1,000 GW.

A similar forecast for the development of the global power sector for the period until 2050 was provided in November 2019 by the leading international company DNV GL. According to the company's report, Energy Transition Outlook 2019. Global and regional forecast to 2050, the total share of onshore and offshore wind power in the Europe's electricity mix will reach 40% by 2050.

1.2. UKRAINIAN WIND POWER MARKET: DEVELOPMENT TRENDS AND KEY FIGURES

2019 marked the passing of a decade since the inception of renewable energy in Ukraine. 2019 was a record year for the national wind power sector. Ukraine joined the world "Gigawatt club" of countries whose installed wind power capacity exceeds 1,000 MW.

Announced in 2018, a transition from the attractive feed-in tariffs to "green" auctions in 2020 pushed wind power companies to intensify their efforts in order to receive building permits and commission new wind power plants by 2020. According to the SE Guaranteed Buyer, wind power projects totaling 5.55 GW received building permits and signed Power Purchase Agreements at the "green" tariff by the end of 2019.

The year 2019 showed the highest growth rates of installed wind capacity since 2009, that is, introduction of feed-in tariffs in the country. Last year, developers commissioned **637.1 MW** of wind capacities in Ukraine, which means almost tenfold growth compared with 67.8 MW in 2018. During 2019, 166 new wind turbines of the 3+ MW class with an average unit capacity of 3.8 MW started generating clean electricity in six regions of Ukraine.

Figure 1.2.1. *Annual wind power capacity additions, by years, 2014-2019, MW*

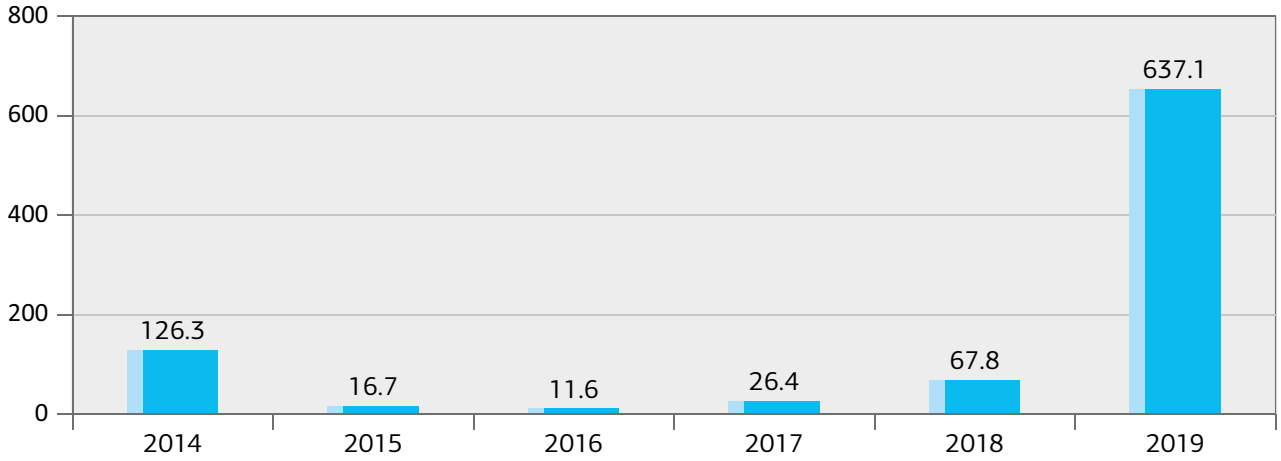
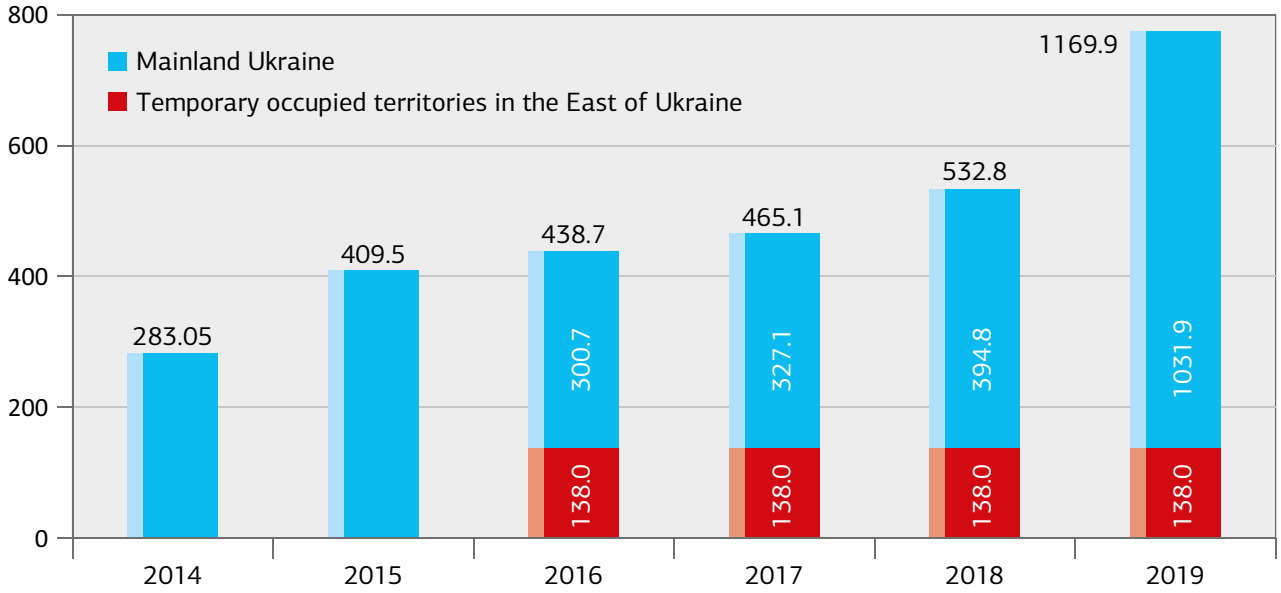


Figure 1.2.2. *Dynamics of wind energy development, mainland Ukraine, 2014-2019, MW*



As of the end of 2019, the installed capacity of the wind power sector in Ukraine reached **1,170 MW.** Thus, wind power sector remains the second largest in the country in terms of installed capacity among renewable energy sources, after solar power. Currently, the share of wind power in the total installed capacity of the renewable energy sector accounts for 18.3%, and 2.15% – of the country's power sector capacity.

Over the past year, wind power plants delivered **2,066 GWh of "green" electricity** to the Integrated Power System of Ukraine, or 1.3% of the total annual electricity generation in Ukraine, sufficient to provide electricity to **more than 410,000 Ukrainian households** with their average monthly electric power consumption of 500 kWh.

Compared to 2018, in 2019 investment in wind power sector increased almost tenfold up to nearly **EUR 1 billion,** or more than a quarter of the total investment in the national renewable energy sector.

Over the past year, six regions of Ukraine installed new wind power capacities, from which Zaporizhzhia region with 300 MW commissioned in 2019 became a leader, and, thus, moved Kherson region, a leader of 2018, to the second place, followed by Mykolaiv, Odesa and Donetsk regions, respectively.

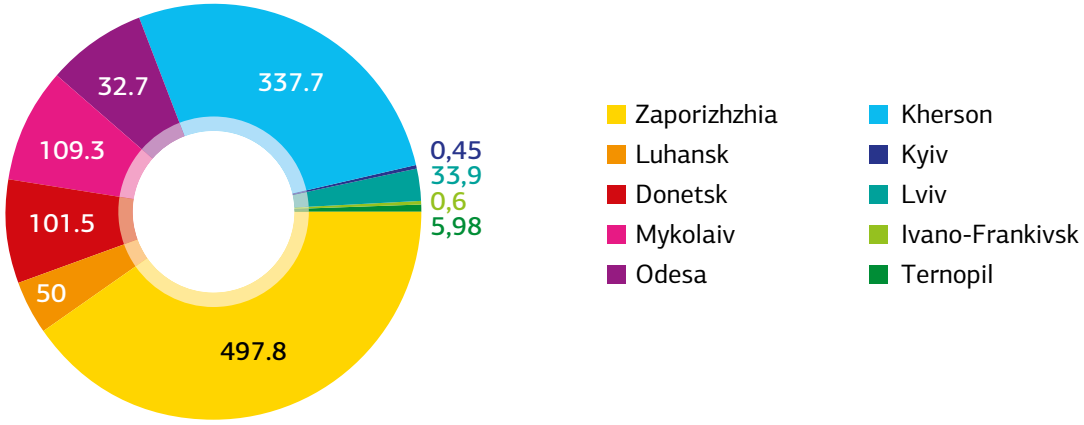
Zaporizhzhia region continues its position as the Ukraine's wind power leader with an accumulated wind capacity of 500 MW.

Table 1.2.1. *Wind power plants that supply electricity at "green" tariff, as of 31 December 2019*

No	Wind Power Plant	Wind Power Plant Operator / Owner	Installed capacity, MW	Number & model of WTG	WPP status
MYKOLAIV REGION					
1.	**Wind Park Ochakivskyi**	Management Company Wind Parks of Ukraine LLC	**52.6**	19 x 2.5 MW WTU2.5 2 x 3.3 MW WTU3.3 1 x 3.5 MW WTU3.5	in operation
2.	**Wind Park Blagodatnyi**	Management Company Wind Parks of Ukraine LLC	9.5	2 x 2.5 MW WTU2.5 1 x 4.5 MW WTU4.5	in operation
3.	**Wind Park Prychornomorskyi**	Management Company Wind Parks of Ukraine LLC	33.2	3 x 2.5 MW WTU2.5 2 x 3.0 MW WTU3.0 3 x 3.2 MW WTU3.2 2 x 3.3 MW WTU3.3 1 x 3.5 MW WTU3.5	in operation
4.	**Wind Park Pivdennyi**	Management Company Wind Parks of Ukraine LLC	7.0	2 x 3.5 MW WTU3.5	in operation
5.	**Wind Park Schaslyvyi**	Management Company Wind Parks of Ukraine LLC	7.0	2 x 3.5 MW WTU3.5	in operation
LUHANSK REGION					
6.	**Wind Park Krasnodonskyi**	Management Company Wind Parks of Ukraine LLC	**25**	10 x 2.5 MW Fuhrlander FL2500 – 100	located in the temporarily occupied and uncontrolled territories, do not supply electricity to the Power System of Ukraine
7.	**Wind Park Lutuginskyi**	Management Company Wind Parks of Ukraine LLC	**25**	10 x 2.5 MW Fuhrlander FL2500 – 100	located in the temporarily occupied and uncontrolled territories, do not supply electricity to the Power System of Ukraine
DONETSK REGION					
8.	**Wind Park Novoazovskyi**	Management Company Wind Parks of Ukraine LLC	**57.5**	23 x 2.5 MW Fuhrlander FL2500 – 100	located in the temporarily occupied and uncontrolled territories, do not supply electricity to the Power System of Ukraine
9.	**Wind Power Plant Vetroenergoprom**	Management Company Wind Parks of Ukraine LLC	**30.53**	204 x 0.1075 MW USW56 – 100 6 x 0.6 MW Turbowinds T600-48 2 x 2.5 MW Fuhrlander FL2500 – 100	located in the temporarily occupied and uncontrolled territories, do not supply electricity to the Power System of Ukraine
10.	**Kramatorska WPP**	Management Company Wind Parks of Ukraine LLC	**13.5**	3 x 4.5 MW WTU4.5	in operation
KHERSON REGION					
11.	**Novorosiiska WPP**	Vindkraft Ukraina LLC	**9.225**	3 x 3.075 MW Vestas V112	in operation
12.	**Stavky WPP**	Vindkraft Ukraina LLC	**9.225**	3 x 3.075 MW Vestas V112	in operation

No	Wind Power Plant	Wind Power Plant Operator / Owner	Installed capacity, MW	Number & model of WTG	WPP status
13.	**Beregova WPP**	Vindkraft Ukraina LLC	12.3	4 x 3.075 MW Vestas V112	in operation
14.	**Novotroitska WPP**	Vindkraft Tavria LLC	72.6	12 x 3.65 MW Vestas V126 8 x 3.6 MW Vestas V136	in operation
15.	**Overyanivska WPP**	Vindkraft Ukraina LLC	68.4	19 x 3.6 MW Vestas V -136	in operation
16.	**Myrnenska WPP**	Vindkraft Kalanchak LLC	163.0	35 x 4.2 MW Vestas V -150 4 x 4.0 MW Vestas V -150	in operation
17.	**Syvaska WPP**	Syvashenergoprom LLC	2.92	16 x 0,1075 MW USW56 – 100 2 x 0.6 MW Turbowinds T600 – 48	in operation
		ZAPORIZHZHIA REGION			
18.	**Botievska WPP**	Wind Power *(DTEK)* LLC	199.875	65 x 3.075 MW Vestas V112	in operation
19.	**Prymorska 1 WPP**	DTEK RE LLC	99.58	26 x 3.83 MW GE 3.8 – 130	in operation
20.	**Prymorska 2 WPP**	DTEK RE LLC	99.58	26 x 3.83 MW GE 3.8 – 137	in operation
21.	**Orlivska WPP**	DTEK RE LLC	98.8	26 x 3.8 MW Vestas V126	in operation
		ODESA REGION			
22.	**Ovid Wind WPP**	Güriş İnşaat ve Mühendislik A.Ş	32.67	9 x 3.63 MW GE 3.6 -137	in operation
		LVIV REGION			
23.	**Staryi Sambir 1 WPP**	Eco-Optima LLC	13.2	4 x 3.3 MW Vestas V112	in operation
24.	**Staryi Sambir 2 WPP**	Karpatskyi Viter LLC	20.7	6 x 3.45 MW Vestas V136	in operation
		KYIV REGION			
25.	**Bonus WTG**	Production– Commercial Firm Ligena LLC	0.45	1 x 0.45 MW Bonus 450/37	in operation
		IVANO-FRANKIVSK REGION			
26.	**Shevchenkove -1 WPP First Phase**	Wind Energy LLC	0.6	1 x 0.6 MW Nordex N43	in operation
		TERNOPIL REGION			
27.	**Zborivska WPP**	Zborivska Poultry Firm LLC	1.98	3 x 660 kW Vestas V47	in operation
28.	**Bioenergoproduct WPP**	Bioenergoproduct LLC	4.0	2 x 2.0 MW Enercon E70	in operation
		TOTAL:	**1169,935 MW**	**573 WTGs**	

Figure 1.2.3. *Wind power capacity by regions, mainland Ukraine, 2019, MW*



Ukraine relies heavily on imported energy sources. While producing about two-thirds of energy supply domestically, Ukraine continues to import coal, natural gas and crude oil and oil products to meet domestic demand. Although import dependence has declined recently, Ukraine imports about 64% of gasoline and 87% of diesel, more than 60% of nuclear fuel, according to the European Bank for Reconstruction and Development.

Wind energy gradually displaces the electricity generated from fossil fuels. Replacing traditional power generation with renewables reduces the country's dependence on imported fuels, lowers the bill on fuel imports and avoids greenhouse gas emissions. Thus, in 2019 wind energy helped to reduce carbon dioxide emissions by **2.27 million tonnes,** saved about 625,000 tonnes of coal or about 200,000 cubic meters of natural gas and avoided the cost of purchasing these fuels.

The national wind energy sector contributes to the state and local budgets, which is an important factor for the economic development of the local communities and country as a whole. According to a survey conducted by the UWEA Secretariat, only wind power suppliers paid **more than 1.78 billion UAH** *(EUR 65.9 million)* in state and local taxes and land leases.

The global wind power industry has already become a major source of new jobs. In Ukraine 920 specialists were directly employed in the wind power companies in 2019, while women accounted for 28% of the total employment in the national wind energy sector.

However, it should be noted that wind energy supplies chain jobs across all regions *(oblasts)* of Ukraine. The total of individuals involved, directly or indirectly *(including machine-building industry, engineering and design, transport, law firms, etc)* in the country's wind power sector is estimated at more that 1,300 persons.

1.3. FUEL AND ENERGY COMPLEX OF UKRAINE

According to the National Power Company Ukrenergo and the National Energy and Utilities Regulatory Commission, as of the end of 2019, the installed capacity of the fuel and energy complex of Ukraine *(power generating facilities in the Crimea and temporarily uncontrolled territories of Donetsk and Luhansk regions excluded)* came to approximately 54.4 Gigawatt, of which 51.2% are thermal power plants, 25.4% – nuclear power plants, 11.6% – hydro power plants and pumped storage power plants, while renewable power plants *(including wind, solar, and biomass)* account for 11.8%.

The main generating capacities of the Integrated Power System of Ukraine include four nuclear power plants *(15 power units),* cascades of 8 hydroelectric power plants on the Dnieper and the Dniester rivers, 3 pumped storage power plants, 12 thermal power plants, 3 turbine generators, and also three large combined heat and power plants.

Nine nuclear power units have already reached the end of their 30-year design lifespan, and their lifetime has been extended for another 10 – 20 years. In the near future, the service life of the three more nuclear power units will expire. Therefore, one of the priority tasks of the National Nuclear Energy Generating Company of Ukraine, a state enterprise operating all NPPs in Ukraine, is to extend the service life of the existing power units. The justified life extension of the nuclear power unit is from 10 to 20 years and decision is made case-by-case based on the results of the safety reassessment process.

Another pillar of the Ukraine's power sector is coal. Pulverized coal power units of high steam parameters with capacities of 150 – 200 MW and pulverized coal and oil-gas power units of supercritical parameters with capacities of 300 and 800 MW at condensing power plants remain back bone of the Ukrainian thermal power industry. Power plants with 150 MW power units were built and commissioned as early as 1959-1964; 200 MW power units – in 1960-1975, 300 MW power units – in 1963-1988 and 800 MW power units – in 1967-1977. Though today, about 20% of the power units have been reconstructed, it does not solve the problems related to meeting modern international environmental standards. The remaining power units are maintained in good condition due to overhaul and current repairs, but most of the equipment is worn out and its deterioration reaches alarming level, therefore further exploitation of these thermal power plants without their renovation is problematic.

Table 1.3.1. *Installed capacities of power plants in Ukraine, per years, GW*

YEAR	Total installed capacities	NPP	%	TPP EGC	%	Other TPP	%	HPP and PSH	%	WPP, SPP and BioPP	%
2014	55.1	13.8	25.1	27.7	50.3	6.6	12.0	5.9	10.6	1.1	2.0
2015*	54.8	13.8	25.2	27.8	50.7	6.5	11.8	5.9	10.7	0.8	1.5
2016	55.3	13.8	25.0	27.8	50.3	6.5	11.8	6.2	11.2	1.0	1.7
2017**	51.7	13.8	26.7	24.6	47.5	5.9	11.5	6.2	12.0	1.2	2.3
2018	49.7	13.8	27.8	21.8	43.9	6.1	12.3	6.2	12.6	1.7	3.4
2019	54.4	13.8	25.4	21.8	40.0	6.1	11.2	6.3	11.6	6.4***	11.8

** Since 2015, without the Crimean electrical system;*
*** Since 2017, without the temporarily occupied and uncontrolled territories in the Donetsk and Luhansk regions;*
**** according to the NEURC's data.*

Source: *NPC Ukrenergo, NEURC*

Table 1.3.2. *Structure and volumes of electricity generation in Ukraine in 2015-2019, bln kWh*

YEAR	Total	NPP	%	TPP EGC	%	Other TPP	%	HPP and PSH	%	WPP, SPP and BioPP	%
2015*	157.3	87.6	55.7	49.4	31.4	12.3	7.8	6.8	4.3	1.5	1.0
2016	154.8	80.9	52.3	49.9	32.2	13.3	8.6	9.1	5.9	1.5	1.0
2017	155.4	85.6	55.1	45.0	29.0	12.4	8.0	10.6	6.8	1.9	1.2
2018	159.3	84.4	53.0	47.8	30.0	12.5	7.8	12.0	7.5	2.6	1.6
2019	156.7	82.7	52.8	47.3	30.2	13.0	8.3	8.1	5.2	5.6	3.5

** Since 2015, without the Crimean electrical system and the temporarily occupied and uncontrolled territories in the Donetsk and Luhansk regions*

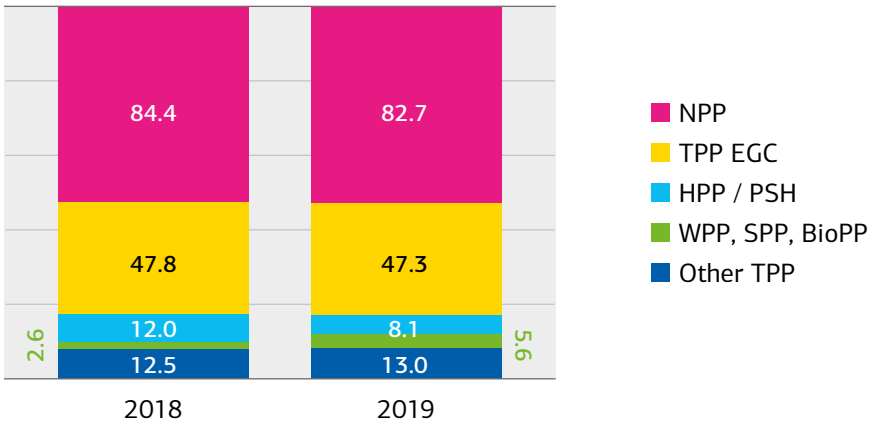
The largest hydro power generating company in Ukraine is PJSC Ukrhydroenergo which operates nine HPPs located on the Dnieper river *(Kyiv, Kaniv, Kremenchuk, Middle Dnieper, Dnieper, Kakhovka hydro power plants)* and the Dniester river *(Dniester hydro power plant and Dniester pumped storage power plant (the first phase of which has been already commissioned and the second one is only planned).* The IPS of Ukraine also includes Tashlyk pumped storage power plant *(operated by the National Nuclear Energy Generating Company of Ukraine)* the construction of which is still in progress. Hydropower is the only large-scale and cost-efficient storage technology available nowadays in Ukraine and plays a critical role in ensuring the functioning of the Ukrainian power system since HPPs and PSPPs are virtually the only capacity resource to smooth out peaks in the system and flatten the night's "failures" in electricity consumption.

Electricity generation in the period from 2014 to 2019 has undergone significant structural changes. In recent years, the country has witnessed growth in its share of renewables in total energy production.

The current energy system of Ukraine could be characterized by overloading of basic capacities *(nuclear power plants and most of the thermal power units)* and an acute shortage of manoeuvring capacities. In fact, the Ukrainian power grid is now one of the least flexible in the world. As a result, thermal power plants designed to operate in basic modes are used as manoeuvring capacities making large-scale RES integration complicated. In addition, low water levels in recent years have further restricted the use of water resources.

According to the Energy Strategy of Ukraine until 2035, the share of renewable energy sources in the energy balance will reach 25% by 2035. To be able to achieve this result, Ukraine has to construct at least 2.5 GW of highly manoeuvrable generation *(according to NPC Ukrenergo)*. This would allow balancing the load on the grid during the peak hours, and letting the country develop more clean energy capacities. At the same time, introduction of ancillary services market could significantly contribute to balance reliability of the power system of Ukraine and increase the flexibility of the grid.

Figure 1.3.1. *Structure and volumes of electricity generation in Ukraine in 2018-2019, bln kWh*



1.4. ELECTRICITY IMPORTS AND CURTAILMENT OF RENEWABLE ELECTRICITY

On July 1, 2019, Ukraine introduced a new liberalized electricity market model. The launch of the new market model allowed, in particular, opening electricity imports to Ukraine.

On the initiative of the Head of the Parliamentary Committee on Energy and Housing and Utility Services, Andriy Gerus, the Verkhovna Rada of Ukraine allowed buying electricity under bilateral agreements from the countries that are not members of the European Energy Community. As a result, commercial import of electricity from Belarus and Russia were resumed on October 1, 2019.

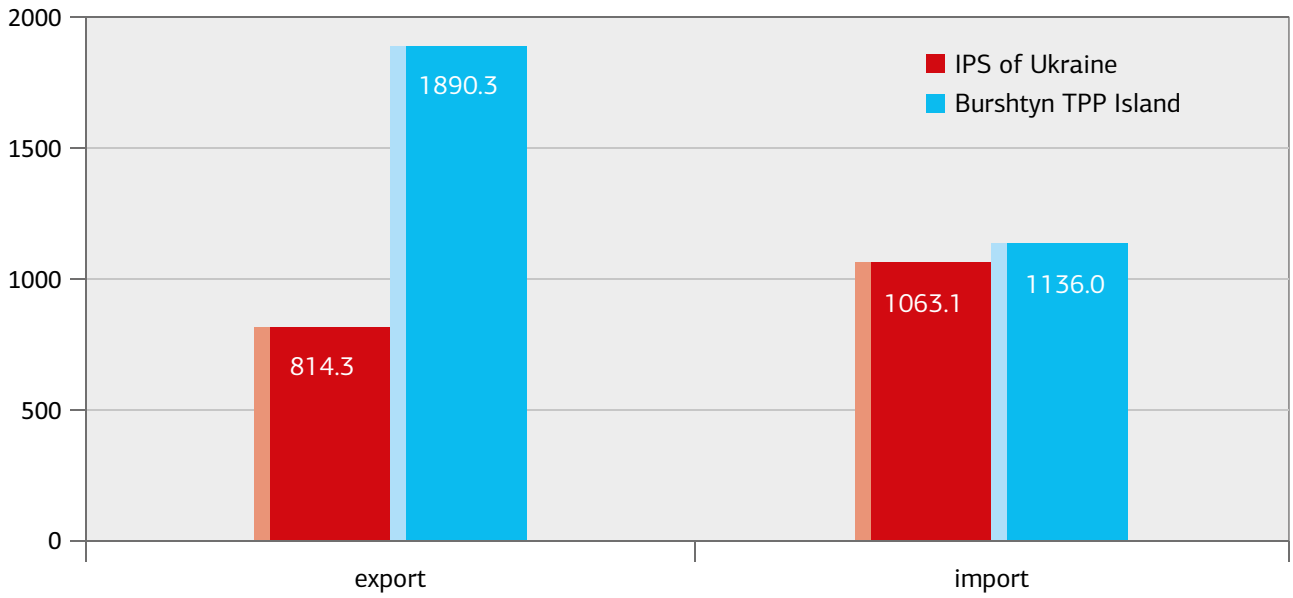
Import of Russian electricity being sold to Ukraine at dumping prices *(lower than in the Russian Federation)* caused considerable criticism in the community. Managers of energy power companies, including the National Nuclear Energy Generating Company of Ukraine, appealed to President of Ukraine Volodymyr Zelensky to stop immediately import of electricity that threatens Ukraine's energy independence, in particular, due to its destruction impact on the state's energy and coal industries.

In November 2019, electricity supply from Russia reached 661,000 MWh and first since the launch of the new electricity market exceeded the total volume of exported electricity – by 5% *(629,000 MWh)*.

On 4 December 2019, the Verkhovna Rada of Ukraine adopted a law that prohibited the supply of electricity to Ukraine from Russia by bilateral agreements, leaving the imports from Russia to the "day ahead" market. The Parliament also gave the government's right to temporarily lift the ban on import of Russian electricity to avoid an emergency situation in the IPS of Ukraine.

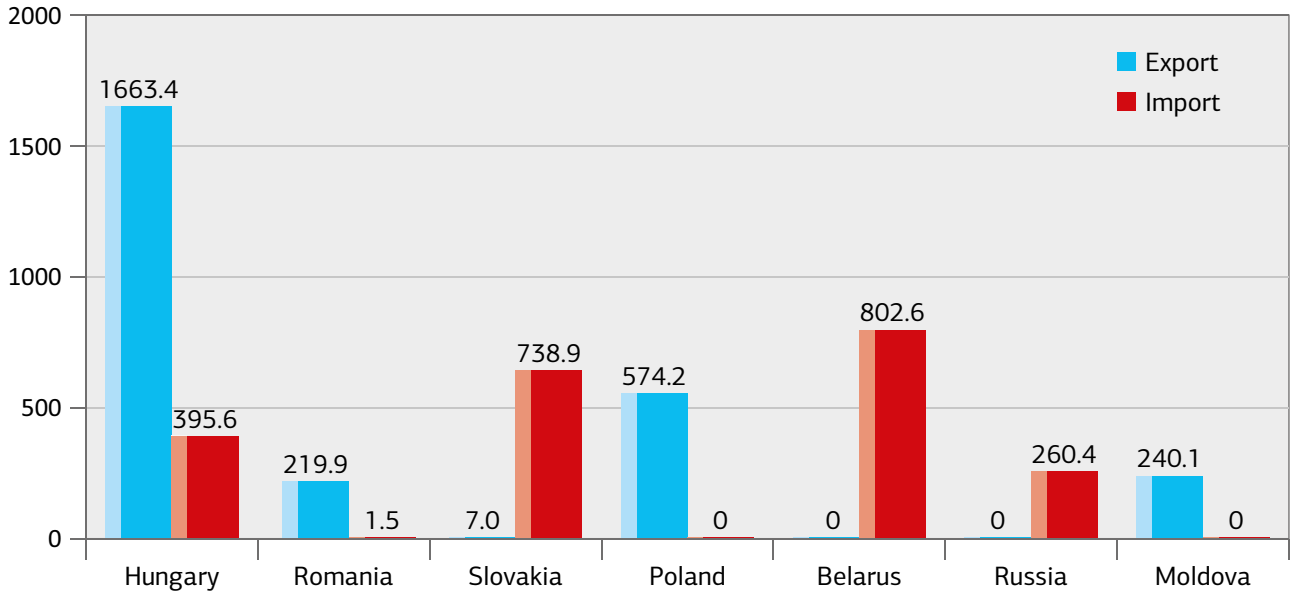
In November 2019, for the first time in the history of the national renewable energy sector, dispatchers of the NPC Ukrenergo curtailed generation of electricity at the Ukrainian wind power plants. So, at certain hours of the night of November 4-5, 2019, limit for wind power plants located in Zaporizhzhia region was 300 – 400 MW. According to experts, the curtailment of renewable electricity was caused by import of electricity from Russia and Belarus.

Figure 1.4.1. *Export / import of electricity in July – November 2019, thousand MWh*



Source: NPC Ukrenergo, 2019

Figure 1.4.2. *Export / import of electricity in July – November 2019, by destinations, thousand MWh*



Source: *NPC Ukrenergo, 2019*

In December 2019, NPC Ukrenergo curtailed generation of wind electricity again; this time at wind power plants located in Zaporizhzhia *(250 MW)* and Kherson *(100 MW)* regions. Currently, based on the legislation in force, compensation for curtailment to a renewable energy generating capacity should be paid at "green" tariff rate established for such generator. At the time of preparing this Overview, there was no procedure in Ukraine for calculating and paying out the cost of electricity that was not delivered by the RES generators as a result of the TSO's command to decrease their load.

1.5. INTEGRATION OF THE UKRAINIAN POWER GRID WITH ENTSO-E

Today, the Integrated Power System of Ukraine is technologically connected and operates in parallel with the power systems of Russian Federation, Belarus and Moldova. It means that the power systems of these countries operate in a common mode and the frequency is similar, while an actual control of the system is carried out by Russia as an owner of the greatest generating facilities.

At the same time, work is being carried out simultaneously between the power systems of Romania, Slovakia, Hungary and Poland, which are synchronized with the European ENTSO-E network and the Southwestern part of the IPS of Ukraine – the so-called Burshtyn Island TPP. Thus, more than 96% of the power transmission system capacities in Ukraine operate in parallel with the systems of the Russian Federation, Belarus and Moldova, and 4% – with the Burshtyn energy island and export of electricity to the EU countries.

The full synchronization of the power system of Ukraine with the European power grid ENTSO-E and separate it from the parallel operation with the power systems of Russia and Belarus will enable the state to minimize its dependence on Russia.

The integration of Ukraine's power system under ENTSO-E is provided for in the Strategy for Sustainable Development "Ukraine-2020" of 2015, the Energy Strategy of Ukraine until 2035 of 2017, the Association Agreement between the European Union, its member states and Ukraine, which entered into force on 1 September 2017, and the Memorandum of Understanding on Strategic Energy Partnership between the European Union together with the European Atomic Energy Community and Ukraine, signed in Brussels on 14 November 2016.

The Agreement on the conditions for the future integration of power systems of Ukraine and Moldova with the grid of continental Europe was signed on 28 June 2017 in Brussels and entered into force on 7 July 2017.

The synchronization of the Integrated Power System of Ukraine with ENTSO-E will have significant advantages for various fields of state activity: from security of supply to the operation of a new model of the electric power market.

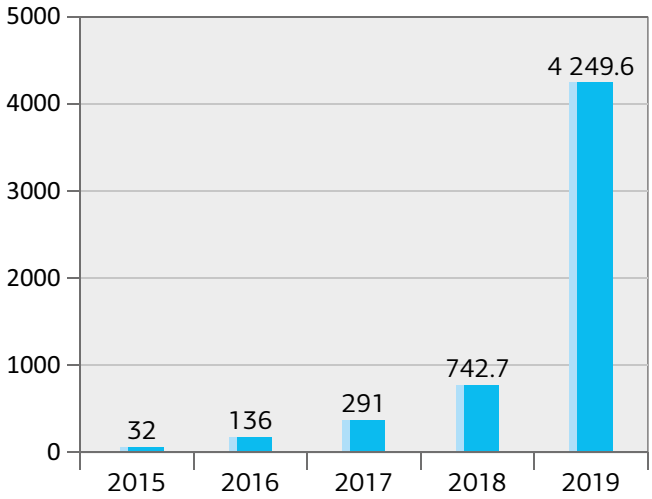
INTEGRATION TO ENTSO-E KEY OUTCOMES FOR UKRAINE:

- strengthening of the reliability and resiliency of the IPS of Ukraine;
- diversification of the energy sources;
- transparent terms of the ENTSO-E mutual assistance procedure;
- increase in the electricity trading with Europe by four times *(up to 18-20 billion kWh per year);*
- limiting electricity price rises while improving the quality of supply;
- improving the investment attractiveness of the power sector in Ukraine;
- increased competition and de-monopolization of the domestic electricity.

1.6. RENEWABLE ENERGY SECTOR IN UKRAINE

Capacity of renewable energies *(large hydro excluded)* in Ukraine increased from 2,117 MW to 6,379 MW by the end of the year. In 2019, renewable energy deployment saw almost six-folder growth by a record 4,249.6 MW compared to the 2018 level *(742.7 MW)*.

Figure 1.6.1. *Annual RES additions in Ukraine per year, MW*



Over the past three years, the most dynamic sector of renewable energy in Ukraine remains solar power. Solar projects rolled out at their fastest rate in 10 years: commercial solar capacities grow by 3,538 MW *(household PV excluded)* accounting for 83% of new renewable additions in 2019. Cumulative installed capacity of photovoltaic installations of households reached 550 MW at the end of the year, demonstrated high growth rates in this segment of national solar sector as well. Thus, a 25% reduction in the "green" tariff rate for SPPs provided for by the laws since 1 January 2020 has caused a real "solar boom" in the country.

The share of wind power additions in cumulative renewable capacities commissioned last year in Ukraine reached 15% or 637.1 MW, while small hydro power plants covered 0.3% or 15 MW and biomass / biogas power plants – 1.7% or 72 MW.

The leader in terms of new RES capacity commissioned during the year, was the Dnipropetrivsk region with 973 MW "green" energy additions, followed by Mykolaiv *(520 MW)*, Zaporizhzhia *(509 MW)* and Kherson *(411 MW)* regions, respectively. The total installed RES capacity, at the end of 2019, was approximately three times larger than in 2018.

Figure 1.6.2. *New RES capacity commissioned in 2019, MW*

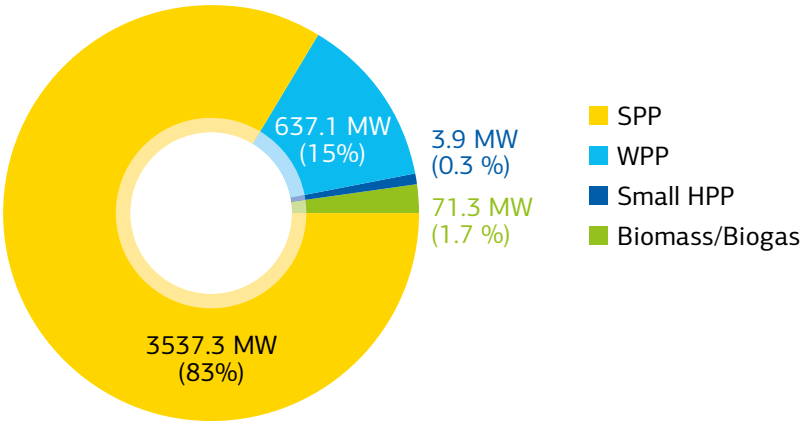
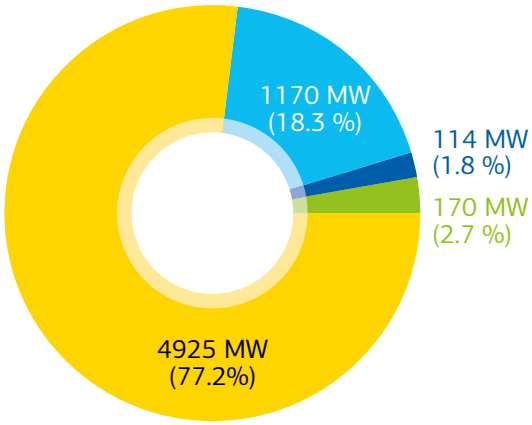


Figure 1.6.3. *RES installed capacity, by different type of RES, 2019, MW*

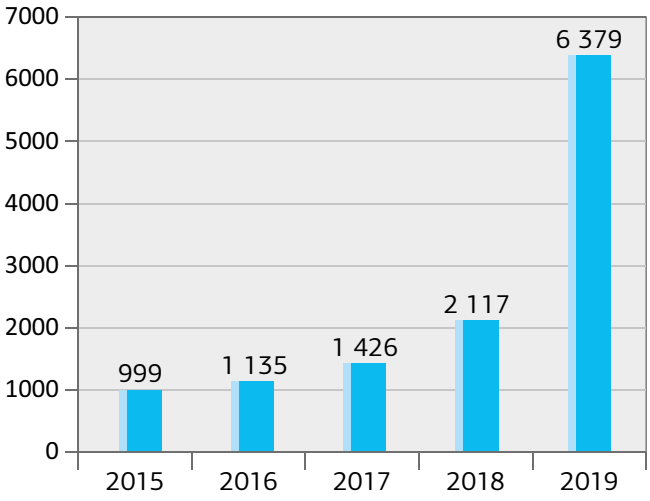


Dnipropetrivsk region *with 1,052 MW commissioned* topped an annual ranking of the best regions of Ukraine for cumulative installed capacity. Zaporizhzhia *(790 MW)* and Kherson *(768 MW)* regions were ranked second and third correspondingly followed by Mykolaiv *(716 MW)* and Odesa *(465 MW)* regions. The share of installed capacity in these regions exceeded 60% of the total renewable energy source capacity in Ukraine.

Over the course of decade of the renewable energy support system existing in Ukraine through "green" tariffs for power generated from RES, more than EUR 9 billion have been invested in the renewable energy industry of Ukraine. According to the State Agency on Energy Efficiency and Energy Saving of Ukraine, over the last 5 years the total investment in "green" electricity projects amounted to almost EUR 4.9 billion, of which about EUR 3.7 billion was invested only in 2019.

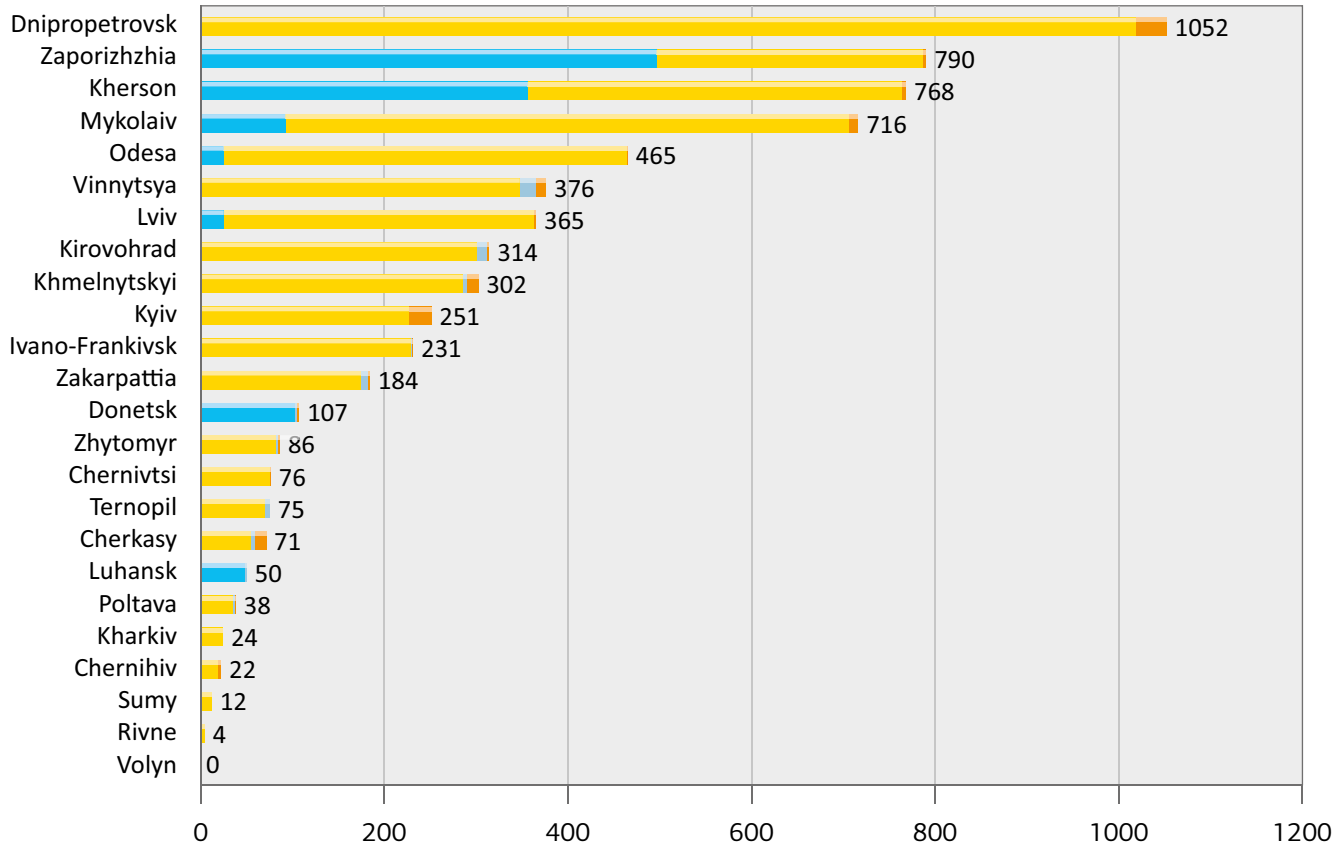
Overall, according to the NPC Ukrenergo, in 2019 renewables delivered 5.56 GWh, which is 2.77 GWh more than the last year achievements. For the several years in a row, wind and solar supplied the largest share of "green" electricity in the country. In particular, all Ukrainian wind power plants delivered 2.08 GWh last year or 0.88 GWh more than in 2018. Annual Solar power plants generation increased by 1.96 GWh reaching 3.064 GWh.

Figure 1.6.4. *Cumulative installed RES capacity in 2015-2019, MW*



It is worth noting that renewable energy projects successfully implemented in the country reduce overall CO_2 emissions by as much as more than 6.1 million tonnes per year. This is comparable to emissions from more than 1.3 million cars.

Figure 1.6.5. *Cumulative RES capacity by regions of Ukraine, 2019, MW*



1.7. CLIMATESCOPE 2019: UKRAINE SCORES 8TH OVERALL AMONG 104 COUNTRIES IN THE WORLD

On 25 November 2019 Bloomberg New Energy Finance *(BloombergNEF)* published its annual edition Climatescope 2019.

Climatescope is a unique country-by-country assessment, interactive report and index that evaluate the investment conditions for clean energy in emerging markets. It profiles 104 markets worldwide and evaluates their ability to attract capital for low-carbon energy sources while building a greener economy. Climatescope is a snapshot of where clean energy policy and finance stand today, and a guide to what can happen in the future.

Ukraine scored 8th overall this year among the 104 economies BloombergNEF surveyed. That improvement, from 63 in 2018, is a vivid sign of the volume and pace of our country's progress in the energy transition.

1.8. WIND CAPACITY ADDITIONS IN 2019

2019 marked 10 years of renewable energy deployment in Ukraine. It was a record year for the national wind power sector – Ukraine crossed a milestone of 1,000 MW capacities in its wind installations.

Last year, 637 MW of new wind capacities were commissioned in Ukraine, demonstrating almost tenfold increase as compared to the previous year, with geographic scope of wind power projects extended to six regions of Ukraine.

ZAPORIZHZHIA REGION IS A LEADER IN INSTALLED WIND POWER CAPACITY

This is not the first time Zaporizhzhia retained its leadership among other regions of Ukraine in installed wind power capacities. In 2019 300 MW of new capacities were added, bringing the cumulative regional installed capacity to 500 MW, including the largest in Ukraine 200 MW Botievo wind power plant.

DTEK Renewables, the largest renewable electricity generator in Ukraine, remains the key wind developer in Zaporizhzhia region. The company reached its strategic goal announced two years ago – to have 1 GW of renewable projects in operation by the end of 2019. Three major wind projects were successfully implemented in the region.

On the way to achieving its strategic goal

In 2019, DTEK Renewables commissioned two phases of the **200 MW Prymorska Wind Power Plant,** which was envisaged by the wind turbine supply contract concluded in 2018 between the DTEK Renewables and GE Wind Energy GmbH. The project features two wind farms located at a distance of 50 km from each other.

Prymorska WPP 1, located in southerly Zaporizhzhia region, was put into operation on 27 February 2019. 26 wind turbines GE-130, with a unit capacity of 3.8 MW and a rotor diameter of 130 m, were solemnly commissioned at the wind power plant.

Six months later, on 1 November 2019, **Prymorska WPP 2** comprising 26 wind turbines GE-137 with a unit capacity of 3.8 MW and a rotor diameter of 137 m, was officially inaugurated.

Since that time, 52 wind turbines totaling 200 MW have been generating "green" electricity at the Prymorska WPP, which annual generation is expected to reach about 700 million kWh, enough to power 350,000 home. 200 MW Prymorska will reduce CO_2 emissions by 750,000 tonnes per year and help the nation to meet its strategic target of diversifying energy sources and strengthening energy independence.

Prymorska WPP is the first Ukrainian project to feature GE's digital substation technology, which generates automatic real-time alerts on the status of the equipment. It also provides information on disruptions or failures in the equipment.

Orlivska WPP – final component of the Gigawatt target

Orlivska Wind Power Plant is the third wind project of DTEK Renewables which implementation started at the end of 2018 under a contract between DTEK Renewables and the Denmark-based Vestas, a global wind turbine manufacturer. 100 MW Orlivska wind power plant was officially launched on 15 November 2019 on the Azov coast of Zaporizhzhia region. 26 Vestas wind turbines with a unit capacity of 3.8 MW will generate about 380 million kWh of electricity, enough to provide clean electricity to nearly 190,000 homes and reduce CO_2 emissions by 400,000 tonnes per year.

In total, EUR 131 million were invested in Orlivska wind power plant, of which about EUR 40 million went for the services and equipment of Ukrainian contractors.

"We have fulfilled one of our strategic goals, we reached 1 GW of green generation capacity by investing more than EUR 1 billion in Ukraine's renewable energy," DTEK CEO Maksym Tymchenko noted at the wind farm opening ceremony.

PROJECTS IN DONETSK AND MYKOLAIV REGIONS

In 2019, Managing Company Wind Parks of Ukraine LLC continued to install wind turbines manufactured in Ukraine at the Ukrainian wind parks. Basically, the company worked with wind power parks located in Mykolaiv region: Blagodatnyi, Pivdennyi, Prychornomorskyi, Schaslyvyi and Ochakivskyi including Olviyska WPP and Olviya WPP *(I, II, III and IV phases)*.

During the year, the company installed there 9 WTU wind turbines totaling 32.1 MW, with a unit capacity ranging from 3.3 to 3.5 MW. The exception was the Olviya WPP-3 with one new 4.5 MW wind turbine installed.

MC Wind Parks of Ukraine LLC also implemented a wind project in Donetsk region – **Kramatorsk wind power plant** comprising 3 new WTU wind turbines with a capacity of 4.5 MW each.

The 4.5 MW WTU wind turbine was developed in collaboration with the German company W2E. The wind turbine hub height is 120 m while its rotor diameter – 151 m. The wind turbine annual generation is estimated to be around 17.9 million kWh at the average wind speed of 7.5 m/sec.

MC Wind Parks of Ukraine LLC is a company that not only set up wind turbines manufacture in Ukraine but also implements their projects in cities and regions bordering on the territory of hostilities.

NEW WIND POWER PLANTS IN KHERSON REGION

Kherson region, the leader in 2018 in terms of installed capacity, in 2019 took second place after Zaporizhzhia region. However, during 2019, 260.2 MW wind turbines were installed and put into operation in Kherson region. Thus, in January 2019, the company Vindkraft Tavria commissioned the second phase of **Novotroitska Wind Power Plant** comprised of 8 Vestas wind turbines V-136 with a unit capacity of 3.6 MW.

photo by Konstantin Brizhnichenko

In the same year, the company Vindkraft Ukraine commissioned another 19 Vestas wind turbines V-136 with a unit capacity of 3.6 MW at the **Overyanivska wind power plant** located in the South of Kherson region. V-136 model with rotor diameter of 136 m and 66.7 m long blades was specifically designed to offer energy production at sites with medium wind speeds. Annual electricity production is expected to reach 266 million kWh, sufficient to power 44,300 homes. Electricity generation at the Overyanivska wind power plant will allow reducing CO_2 emissions by 210,000 tons per year.

In addition, in 2019 Vindkraft Kalanchak LLC constructed the **Myrnenska wind power plant** in the South of Kherson region. The 163 MW wind power plant consists of 39 Vestas V-150 wind turbines with a unit capacity of 4.2 MW. This model is the largest Vestas turbine in diameter *(50 m)* to date. The annual generation of clean electricity is expected to reach nearly 574.6 million kWh, while annual CO_2 emission reductions will exceed 455,000 tonnes.

THE FIRST WIND POWER PROJECT IN ODESA REGION

2018 demonstrated significant attempts of local authorities to switch the Odesa region to environmentally friendly wind energy. This trend has also been observed over the past year. As of the end of 2019, there were projects in the region with a total capacity exceeding 750 MW, which had received a positive environmental impact assessment, and another 72 MW were in process of public hearings.

On 21 September 2019, the first wind power plant – Ovid Wind – was opened in the Ovidiopol district of Odesa region. This project implemented by the Turkish company Güriş İnşaat ve Mühendislik A.Ş., a division of Güriş Holding Co. Inc. consists of 9 GE 3.6-137 wind turbines with a capacity of 3.6 MW and hub height of 131 m.

It is worth noting that the Ovid Wind WPP became the first one in Ukraine where wind turbines manufactured by General Electric, one of the leaders of the global wind power industry, were installed.

Important features of the Odesa region include high solar power penetration into the regional energy grid which potentially creates a problem for the construction of wind power plants and their connection to power grids. Project Ovid Wind is a successful example of implementation and exploitation of wind technology even in such, at first glance, unfavorable conditions.

CONSTRUCTION OF NEW WIND POWER PLANT IN TERNOPIL REGION

In 2019, the Vestas V – 47 wind turbine with a unit capacity of 660 kW was installed in Ternopil region in the territory of Zboriv Poultry Factory in Zboriv town. This wind project, although not as powerful as all above-mentioned ones implemented last year in Ukraine, is a good example of utilizing energy from wind not only by large commercial wind power plants but also by individual enterprises and households. This wind turbine supplies electricity not only to the poultry farm, but also to the local community of Zboriv town.

Table 1.8.1. *Wind Power Plants commissioned in 2019, MW*

Name of the Wind Power Plant *(WPP)*	Owner	Capacity	Name, number & WTG type	Region
Kramatorska WPP	Wind Parks of Ukraine LLC	13.5	WTU 3 x 4.5 MW	Donetsk Region
Blagodatnyi Wind Park Olviya 3 WPP	Wind Parks of Ukraine LLC	4.5	WTU 1 x 4.5 MW	Mykolaiv Region
Pivdennyi Wind Park Olviya 2 WPP	Wind Parks of Ukraine LLC	7.0	WTU 2 x 3.5 MW	Mykolaiv Region
Prychornomorskyi Wind Park Olviyska WPP	Wind Parks of Ukraine LLC	10.1	WTU 2 x 3.3 MW 1 x 3.5 MW	Mykolaiv Region
Schaslyvyi Wind Park Olvia 4 WPP	Wind Parks of Ukraine LLC	7.0	WTU 2 x 3.5 MW	Mykolaiv Region
Ochakivskyi Wind Park Olvia WPP	Wind Parks of Ukraine LLC	3.5	WTU 1 x 3.5 MW	Mykolaiv Region
Novotroitska WPP *(second phase)*	Vindkraft Tavria LLC	28.8	Vestas V-136 8 x 3.6 MW	Kherson Region
Overyanivska WPP	Vindkraft Ukraina LLC	68.4	Vestas V-136 19 x 3.6 MW	Kherson Region
Myrnenska WPP	Vindkraft Kalanchak LLC	163.0	Vestas V-150 35 x 4.2 MW 4 x 4.0 MW	Kherson Region
Zborivska WPP	Zborivska poultry Farm LLC	0.66	Vestas V47 1x 660 kW	Ternopil Region
Prymorska 1 WPP	DTEK RE LLC	99.58	GE 3.8-130 26 x 3.83 MW	Zaporizhzhya Region
Prymorska 2 WPP	DTEK RE LLC	99.58	GE 3.8-137 26 x 3.83 MW	Zaporizhzhya Region
Orlivska WPP	DTEK RE LLC	98.8	Vestas V126 26 x 3.8 MW	Zaporizhzhya Region
Ovid Wind WPP	Güriş İnşaat ve Mühendislik A.Ş	32.67	GE 3.6-137 9 x 3.63 MW	Odesa Region
Total 637,09 MW				

1.9. ENVIRONMENTAL IMPACT ASSESSMENT PROCEDURE

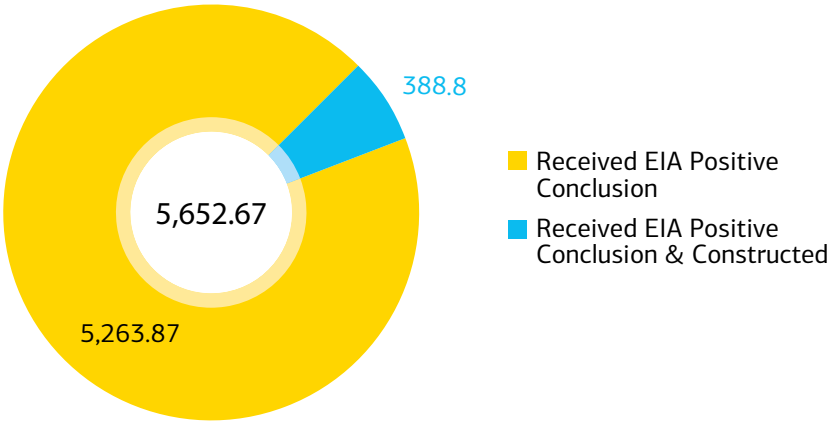
Law of Ukraine On Environmental Impact Assessment, which came into force in December 2017, provides the list of planned activities *(any construction, reconstruction, re-engineering, disassembly of objects etc),* which are subject to a mandatory environmental impact procedure. The list of energy related objects which are subject to mandatory include: "wind parks, wind power plants with two or more turbines and with a height exceeding 50 meters; power lines *(overhead and cable)* with voltage of 220 kV or more and length over 15 km and substations with a voltage of 330 kV or more".

Thus, no proposed activity is allowed without conducting an environmental impact assessment. Moreover, EIA conclusion is mandatory for the business entity as it can prohibit or allow certain activity, as well as establish environmental conditions and restrictions on the activity planned by such entity.

The current EIA procedure envisages the following steps:

- notification by the respective business entity to the authorized state agency *(either local state administrations or Ministry of Ecology and Natural Resources of Ukraine)* about planned activity which is subject to EIA;
- preparation by the respective business entity of an EIA report;
- public hearings;
- analysis by the authorized state authority of information provided in the EIA report and any other information, including information obtained during public hearings;
- rendering of a motivated conclusion regarding EIA by the authorized state agency *(either local state administrations or Ministry of Ecology and Natural Resources of Ukraine);*
- consideration of the EIA Conclusion before a company gets a permit for the planned activity.

Figure 1.9.1. *Status of EIA for wind projects in Ukraine as of 31.12.2019, MW*

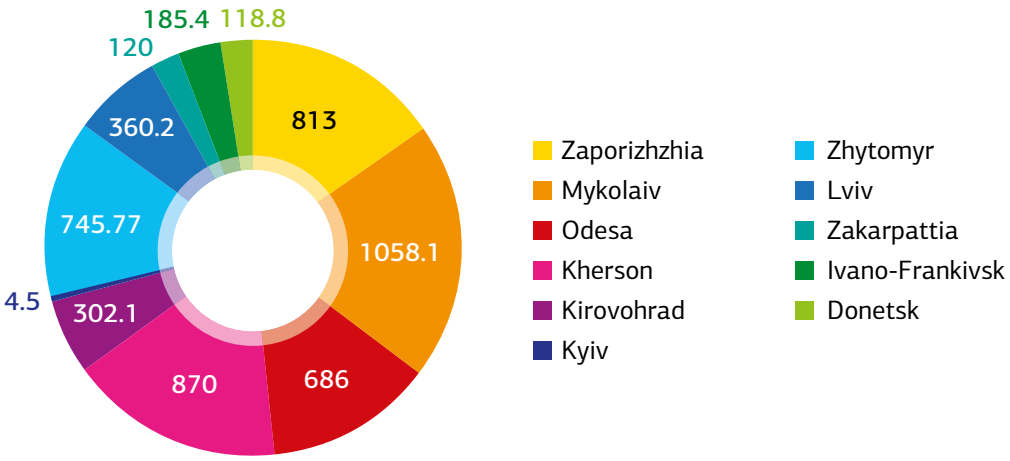


The entire EIA procedure is carried out through the Unified National Environmental Impact Assessment Registry *(EIA Registry);* it is open to the public and accessible online.

Over two years of the effect of the law 90 wind power projects totalling 5,652.67 MW with a positive EIA conclusions have been registered with the Unified National Environmental Impact Assessment Registry, of which 8 wind power plants with a total installed capacity of 388.8 MW have already been put into operation.

Another 23 projects totaling 404.4 MW are in the process of public hearings.

Figure 1.9.2. *Wind projects registered with Unified National Environmental Impact Assessment Registry, per regions of Ukraine, as of 31.12.2019, MW*



1.10. SMALL WIND TURBINE MARKET OF UKRAINE

Legislative changes in 2019 have also affected the small wind turbine market of Ukraine. Firstly, for private households that are planning to use wind technologies, the power generation capacity of their installations was increased to 50 kW. Secondly, a new category of energy generating installation was introduced – "a combined wind and solar generating system" with a fairly good tariff. These legislative changes were supposed to activate the development of more balanced systems to generate electricity during the year, regardless of the season.

Thus, according to the provisions of the Law on Alternative Energy Sources, for private households *with energy generating systems commissioned from 1 January 2019 to 31 December 2019,* the "green" tariff rate was set at the level of:

- for electricity generated by a solar system with installed capacity below 30 kW – 18.09 eurocents per 1 kWh;
- for electricity produced by a wind installation with installed capacity below 50 kW – 11.63 eurocents per 1 kWh;
- for electricity generated by a combined wind-solar generating systems of private households with installed capacity not exceeding 50 kW – 16.37 eurocents per 1 kWh.

However, based on the fact that these legislative norms were adopted only in August 2019, they have not become widely used. Moreover, 25% reduction of the feed-in-tariff rate for private households to 12.28 eurocents per 1 kWh from 1 January 2020 provided by the law, negatively impacted the market, making use of small wind generators in combined systems economically unattractive. Disappointing statistics on the production and installation of small wind turbines of Ukrainian origin – only 24 kW was installed in 2019 – significant proof of this. Thus, plan to widely expand power-generating systems for distributed generation in Ukraine remains, for the time being, just declarative.

It should be noted, that the UWEA supports developing distributed generation in Ukraine and promotes use of small wind turbines with unit capacity less then 150 kW by private households. Following introduction of legislative provisions for 150 kW installations, some increase in number of such combined wind-solar systems installed by small and medium-sized businesses, energy cooperatives, farms, etc. has been expected. Unfortunately, the law also provides for a reduction of FiT rate by 25% – to 12.28 eurocents per 1 kWh commencing 1 January 2020 *(16.37 eurocents in 2019),* which makes use of wind generators in combined systems with a capacity not exceeding 150 kW unattractive either.

Thus, the ambition plan to maintain distributed, seasonally and daily-balanced generation for private households and small businesses, announced at all state levels has not been put into practice. As a result, only off-grid small wind turbines for own electricity supply were installed last year in Ukraine.

In 2019, small and medium-sized businesses began to express interest in wind power plants with an installed capacity below 5 MW. Under existing legislation such "mini" wind power plants are not obliged to participate in the RES auctions to obtain state support in the form of FiT. Currently, central and western regions of Ukraine mainly demonstrate the interest in such wind plants.

However, given financial responsibility for imbalances caused by wind generators, a rapid development of this segment of the national wind power market is not expected. Firstly, buying services for wind electricity forecasting from a foreign company *(currently there are no Ukrainian company on the market that would provide electricity forecasting services)* for only one or two wind turbines is quite expensive. Secondly, given the wide geography scope of such installations, their certain isolation from the territories with large commercial wind power plants *(primarily the south of Ukraine),* it has no sense to use their combined data when conducting a general forecast of electricity output.

To promote small wind power development in Ukraine, the UWEA's Department of Small and Medium-sized Wind Power Sector has created popular among Ukrainian consumers Facebook page "Windmills for Home and Business" and issued different thematic reports.

1.11. POSSIBLE RESTRUCTURING OF FEED-IN TARIFF. DISPUTE BETWEEN INVESTORS AND STATE

Following the adoption of the Law of Ukraine On Electricity Market, in July 2019 Ukraine transitioned to a new wholesale electricity market, replacing the previous single buyer model *(until 1 July 2020, the SE Energorynok was the only "green" electricity off-taker)*. The new market model is based on the bilateral, day-ahead, intra-day, balancing and ancillary services market. Also, since 1 July 2019, the SE Guaranteed Buyer started to perform its functions of purchasing and selling electricity generated from renewable energy sources.

The current renewable energy support system has led to record megawatts of renewable energies added in Ukraine in 2019. At the same time, problems such as grid stability and the financial situation of the renewables off-taker, revealed certain flaws in the support system design. The rapid increase in renewable energy capacity in 2019 *(first of all, solar projects, the total installed capacity of which increased by a record 3,538 MW)* has caused unbalancing functioning of national electricity market.

In October 2019 the Ministry of Energy and Environmental Protection of Ukraine initiated a working group composed of representatives from both the Ministry and wind and solar power sectors to find acceptable solutions to number of issues related to the Ukrainian renewable energy sector. The voluntary restructuring of the PPAs, including feed-in tariff rate reduction combined with an extension of the tariff validity was part of the discussions.

During autumn 2019, two draft laws were prepared and under discussion to help rectifying the situation but none of them has been adopted.

On 28 November 2019 the Ministry of Energy and Environmental Protection of Ukraine announced its official concept on the draft of restructuring law. Unfortunately, it did not take into account the proposals made by the RE business community.

In December two draft laws on restructuring of the PPAs – draft law No. 2543 and alternative draft law 2543-1 – were registered in the Parliament on 6 and 24 December 2019 correspondingly *(Information on these bills is provided in Chapter II "Wind Power Legislation")*. However, the Ministry of Energy and Environmental Protection of Ukraine did not support the Draft Laws registered by the People's Deputies. In addition, despite all announcements made by the Ministry early December, it has never registered the bill in Parliament.

On 9 December 2019, the UWEA joined the application of the European-Ukrainian Energy Agency *(EUEA)* to the Energy Community Secretariat's Dispute Resolution and Negotiation Centre on finding an optimum solution for possible changes in support system for renewables in Ukraine.

UWEA applied to the Dispute Resolution and Negotiation Centre with a purpose of peaceful settlement of the issues concerning voluntary restructuring of PPAs including feed-in tariff rates. Prior to that, both associations tried to offer a compromise option of resolving the dispute and submitted their proposals to both the Ministry of Energy and Environmental Protection and the Verkhovna Rada Committee on Energy, Housing and Utilities Services.

Upon applications of the associations, the Energy Community Secretariat's Dispute Resolution and Negotiation Centre began the mediation process in the case: Dispute 2/2019 – Ukraine between the associations and the Ministry of Energy and Environmental Protection. Meetings within the process of mediation were scheduled for January – February 2020.

THE ENERGY COMMUNITY SECRETARIAT'S DISPUTE RESOLUTION AND NEGOTIATION CENTRE WAS ESTABLISHED IN 2016. THE CENTRE PROVIDES SERVICES REGARDING FACILITATION AND MEDIATION OF DISPUTES BETWEEN INVESTORS AND THE STATE. THE MAIN ADVANTAGES OF THE DISPUTE RESOLUTION AND NEGOTIATION CENTRE INCLUDE THE PRESENCE OF NECESSARY EXPERTISE CONCERNING DISPUTES IN THE ENERGY SECTOR; CONFIDENTIONAL AND FREE MEDIATION.

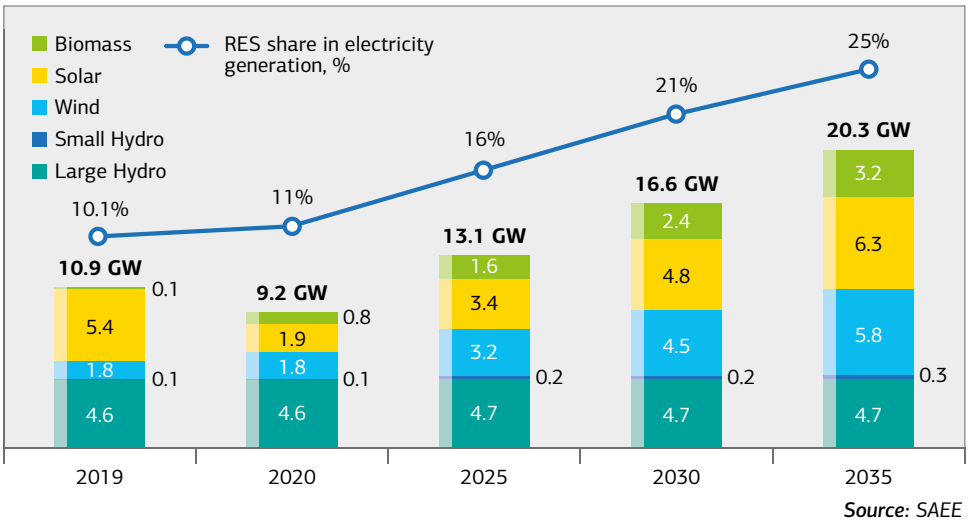
1.12. FUTURE WIND POWER DEVELOPMENT FORECAST

To implement the Decision of the Energy Community Ministerial Council "On the implementation of Directive 2009/28/EU and amending Article 20 of the Treaty establishing the Energy Community", according to which mandatory national goals in the field of renewable energy are set, Ukraine has committed to reach 11% RES share in total energy supply by 2020.

The Cabinet of Ministers of Ukraine therefore approved the National Renewable Energy Action Plan for the Period up to 2020. This plan envisaged an increase in the installed renewable electricity capacities to 10,900 MW *(including large hydro)* and 26 billion kWh of "green" electricity generation in 2020.

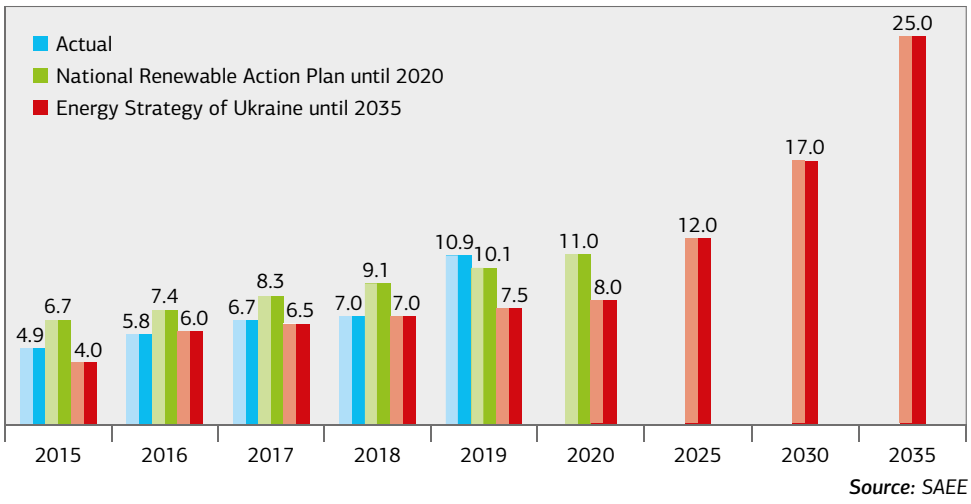
In 2017, the Energy Strategy of Ukraine till 2035 "Security, Energy Efficiency, Competitiveness" was adopted, which identified priority areas for the Ukraine's fuel and energy complex development in the period till 2035. This Energy Strategy predicts the increase of renewable energy share in the total primary energy supply to 12% by 2025 and to 25% by 2035.

Figure 1.12.1. *RES development until 2035: status and prospects*



Source: SAEE

Figure 1.12.2. *RES share in energy balance of Ukraine by 2035, %*



Source: SAEE

The state support for renewable energy in Ukraine promotes the rapid development of renewable energy sources. However, it should be noted that high credit rates, due to the country's high political and economic risks, significantly offset the rather high rates of the "green" tariffs in Ukraine in comparison with other European countries. In addition, despite official statements on support for renewable energy, the government's policy indicates that other types of generation, in particular nuclear, are more important for Ukrainian officials.

An unsettled issue of the SE Guaranteed Buyer's budget deficit and possible restructuring of the PPAs negatively affects the future growth rate of industry. According to the UWEA's survey of companies operating in the renewable energy market of Ukraine, the growth rate of wind power capacity is expected to decrease during 2020 with the commissioning of only about 450 MW of new capacity *(after a record 637 MW in 2019).*

According to the UWEA forecast, the total installed capacity of wind power plants located in mainland regions of Ukraine may reach **1,600 MW** by the end of 2020.

In early September 2018, the Norwegian wind developer NBT signed the EPC-agreement for the implementation of the Syvash wind power plant along the northern shore of Lake Syvash, Kherson region. The **250 MW Syvash Wind Power Plant** will comprise of 63 wind turbines and is expected to be fully commissioned during second half 2020.

The total CAPEX of the wind energy project amounts to EUR 380 mln and is being implemented by Powerchina Fujian Electric Power Engineering. A financing agreement between NBT, Total Eren and the European Bank for Reconstruction and Development *(EBRD)* was signed at the prestigious Davos World Economic Forum in January 2019.

When completed, the Syvash WPP will be one of the largest in Ukraine and will send 850 GWh of clean electricity a year into the grid and can supply the electricity needs of approximately 100,000 households.

Implementation of **500 MW Zaporizhzhia wind power plant** started in Pryazovsk and Melitopol districts of Zaporizhzhia region in 2008. When completed theh Zaporizhzhia WPP will comprise up to 167 Wind Turbine Generators. Its first phase totaling 98 MW implemented by EuroCape Ukraine 1 LLC is under construction *(at the time of writing this report).* The first phase includes installation of 27 wind turbines *(the first sets of which have already been delivered to Ukraine),* construction of its own transformer substation and 330 kV overhead transmission lines. Financing for the first phase of the project is provided by the Overseas Private Investment Corporation *("OPIC").* Inauguration of the first 98 MW of the Zaporizhzhia wind power plant is expected in 2020.

MC Wind parks of Ukraine expands generating capacity of their wind power plants in Mykolaiv region. In 2020, for example, the company plans to install up to 30-40 MW of the Ukrainian-made wind turbines with a capacity of 4.8 MW at their **Olviya Wind Power Plant.** The wind turbines of the same model totaling 25 MW will also be erected at the **Kramatorsk wind power plant** in Donetsk region.

In 2020, VR Capital and Ukraine Power Resources are expected to put into operation the first stage of the **Dnistrovska wind power plant** with a total installed capacity of 40 MW in the Bilhorod-Dnistrovskyi district of Odesa region. For the first phase of the project it is planned to install 10 GE wind turbines with a capacity of 4.0 MW each, and additional 60 MW are planned for 2021.

Limited Liability Company Yuzhne Energy has intention to construct the **initial phase of wind power plant with total capacity of 76.5 MW at Lymanskyi District, Odesa region.** The Initial Phase of WPP with capacity of 27 MW will compose 6 turbines, infrastructure objects and electric transmission line, which will be installed at the territory of Sychavska, Lyubopil and Vyzyrska Village Councils outside the settlements.

The project's owner is Chinese company China Longyuan Power Group Corporation Ltd., which is the biggest operator of windfarms in China with installed capacity of 19 GW as of the first half 2019, which is 9.9% from the nationwide wind power capacity in China.

The project is at an early stage of construction, which involves the installation of 17 modern wind turbines with a capacity of 4.5 MW each, the construction of own substation and the installation of 110 kV high-voltage power lines. The wind power plant is expected to be commissioned in 2021.

Special attention should be paid to the project of the **800 MW wind park in the Nikolske and Mangush districts of Donetsk region** developed by WIND FARM LLC, which differs from any other wind projects in Ukraine.

Firstly, the project involves the establishing manufacture of wind turbine components in Ukraine. Such supply chain will include the mining industry, metallurgy, machine building, transport and construction industries, as well as energy sector. At the same time, wind turbine production will not be limited to the need of WIND FARM LLC only but will be exported as well.

WIND FARM LLC has already secured the potential support of one of the world's leading wind manufacturers, which is considering the possibility of setting up a production facility in Donetsk region based on the one of the existing enterprises in the machine-building industry. Currently, significant amounts of wind power equipment installed in the West European countries are manufactured in China. From this perspective, Ukraine occupies a favorable geographical position located between China and the Western Europe, so the equipment produced in Ukraine will have a competitive price for a lower transportation cost to ensure manufacturing capacity utilization.

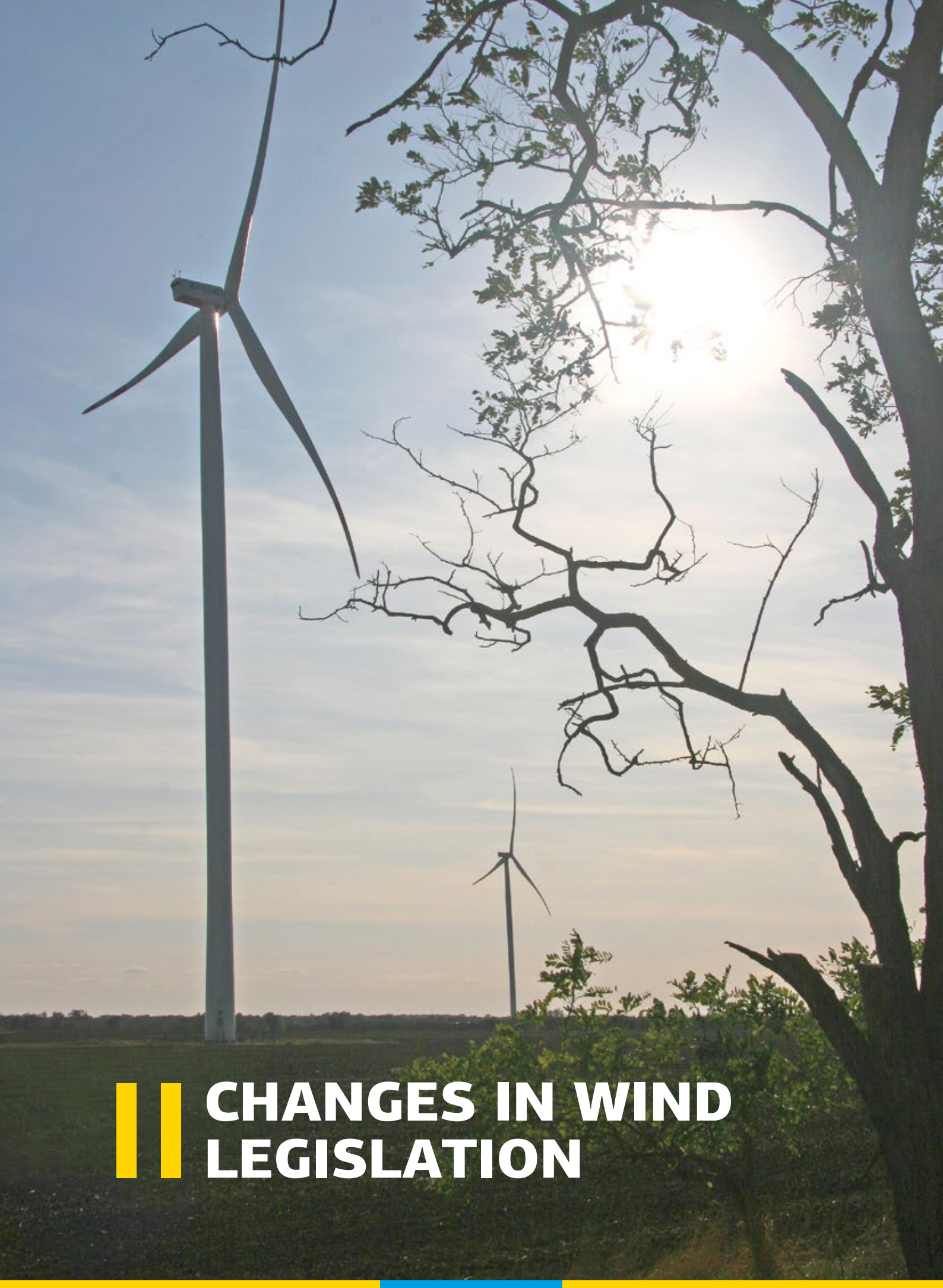
Secondly, the company is planning to sale electricity generated from wind under the market price not applying for "green" tariff, thus contributing to liquidity of the electricity market and electricity price reduction.

To make the project more attractive for investors, the Company expects some surcharge to the market price for the equipment of Ukrainian origin, which should be introduced in Ukraine provided by the legislative provision. Considering the volume of additional revenues to the budget, the project has many advantages for Ukraine since its implementation increases local and national budget earnings through taxes paid and improves labor market situation.

The new approach of WIND FARM LLC demonstrates a new possibility for project financing through the creation of additional revenues to the state budget and gives hope for further development of the entire RE industry. After all, others will follow a way paved by the large-scale project.

In general, as of 31 December 2019, the SE Guaranteed Buyer has concluded pre-PPAs for 5.6 GW of wind capacity.

In the next two years, UWEA expects the growth of wind power capacity primarily in such regions of Ukraine as: Zaporizhzhia, Mykolaiv, Kherson, Odesa, Donetsk, Ivano-Frankivsk, Zhytomyr and Rivne.



II CHANGES IN WIND LEGISLATION

2.1. SUMMARY OF LEGISLATION CHANGES IN 2019

I. NEW ELECTRICITY MARKET

The Law of Ukraine "On the Electricity Market" No. 2019-VIII dated 13 April 2017

According to the Law of Ukraine "On the Electricity Market" from 1 January 2019 the Retail Electricity Market became operational; from 1 July – the Wholesale Electricity Market became operational *(the Market of Bilateral Contracts, the Day-Ahead Market and the Intraday Market, the Balancing Market)* and 12 December – the Ancillary Services Market became operational *(the first auction for the purchase of ancillary services took place).*

During 2019 the Law of Ukraine "On the Electricity Market" was amended 6 times, the main ones that had an impact on the wind power market are the following:

1. The SE Guaranteed Buyer is obliged to direct the difference between the income and expenses emerged during the fulfillment of special obligations, to ensure the covering of its own expenses during fulfillment of special obligations on purchase of electricity under feed-in tariff and at auction price or other special obligations.
2. The sale and/or supply of electricity imported from the Russian Federation under bilateral contracts and on the intraday market is prohibited. In order to avoid an emergency in the Integrated Power System of Ukraine, the Cabinet of Ministers of Ukraine has the right to cancel this prohibition, having determined the term of renewal of such prohibition.
3. In connection with the transformation of the SE NPC Ukrenergo into the PrJSC "NPC "Ukrenergo", prior to the beginning of the operation of certified TSO and prior to the issuance of the relevant license for the TSO, the functions, rights and responsibilities of the TSO are accordingly fulfilled by a state enterprise, performing the centralized dispatch *(operational and technological)* management of the IPS of Ukraine, *or a joint-stock company formed in the process of transformation of a state enterprise, which has license for carrying out commercial activity on transmission of electricity by the main and interstate power grids.*
4. Until 1 July 2023, the cost of service on ensuring the increase of the share of electricity production from alternative sources provided by the SE Guaranteed Buyer is determined taking into account the difference between the income and expenses emerged during the fulfillment by the SE Guaranteed Buyer of the special obligations assigned to him by the CMU to ensure the public interests *(except for special obligations to ensure the increase of the share of electricity production from alternative energy sources).*
5. Amendments made by the Law of Ukraine "On Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources" No. 2712-VIII dated 25 April 2019, which is discussed in detail below.

Resolution of the CMU "On Determination of the Authorized Bank of the Electricity Market" No. 140 dated 27 February 2019

The authorized bank of the electricity market has been defined the Public Joint-Stock Company "State Savings Bank of Ukraine".

Resolution of the CMU "On the Establishment of State Enterprises Guaranteed Buyer and Market Operator No. 324 dated 17 April 2019 and Resolution of the CMU on approval of their charters No. 455 and No. 454 dated 22 May 2019

The Resolution of the CMU created:

- SE Guaranteed Buyer on the basis of the respective branch of the SE Energorynok through allocation of the property, rights and responsibilities in relation to it according to the distributive balance to perform functions of the guaranteed buyer of electricity;
- SE Market Operator on the basis of the respective branch of the SE Energorynok through allocation of the property, rights and responsibilities in relation to it according to the distributive balance to perform functions of the electricity market operator with a further transformation of it into a joint-stock company, 100% of the shares in the authorized capital of which belongs to the state and is not subject to privatization or alienation by other means, in accordance with the legislation.

The SE Guaranteed Buyer and the SE Market Operator are the legal successors of the property, rights and responsibilities of the SE Energorynok in accordance with the distributive balances, except for receivables and payables for electricity.

Resolution of the CMU "On Approval of the Regulation on Assignment of Special Obligations on Electricity Market Participants to Ensure Public Interests Within the Process of Functioning of the Electricity Market" No. 483 dated 5 June 2019 with amendments in accordance with Resolutions of the CMU No. 512 dated 12 June 2019, No. 803 dated 21 August 2019, No. 1003 dated 9 December 2019 *(hereinafter in this subparagraph – the Resolution of the CMU on PSO).*

Participants of the electricity market, who are assigned with the fulfillment of special obligations, and the list of actions belonging to the special obligations, in particular special obligations, fulfillment of which is required to ensure payments under feed-in tariff, have been established.

From 29 August 2019 *(according to the Resolution of the CMU No. 803)*, in order to make payments under feed-in tariff, the Resolution of the CMU on PSO provides for opportunity of the SE Guaranteed Buyer to direct the differences between the income and expenses emerged during the fulfillment of special obligations to ensure covering its own reasonable expenses for the fulfillment of special obligations on purchase of electricity under feed-in tariff and at auction price.

Provisions that grant the mentioned rights to the SE Guaranteed Buyer are included to the Law of Ukraine "On the Electricity Market" only on 27 December 2019 by the Law of Ukraine No. 330-IX dated 4 December 2019, much later after their establishment in the Resolution of the CMU on PSO.

The mentioned change is resulted from the deficit of the budget of the SE Guaranteed Buyer for payment of electricity under feed-in tariff. Initially, the Law of Ukraine "On the Electricity Market" and the Resolution of the CMU on PSO stipulated that for the purchase of electricity under feed-in tariff and at auction price, the SE Guaranteed Buyer provides the transmission system operator with a service on ensuring an increase in the share of electricity production from alternative sources. The transmission system operator pays for the service on ensuring in the share of electricity production from alternative sources at the expense of the tariff on transmission services. However, since the beginning of the new electricity market operation, the application of the Resolutions of the NEURC on establishment of the tariff for the services on electricity transmission for July and August 2019 was suspended. And since September 2019, the transmission tariff was reduced by two times by the NEURC. Therefore, the payments of the transmission system operator were not sufficient for settlements with producers under feed-in tariff.

Besides, from 10 December 2019 *(in accordance with the CMU Resolution No. 1003),* the SE Guaranteed Buyer is not obliged to sell electricity to the transmission system operator and distribution system operators in volumes that correspond to 80% of the volumes necessary for compensation of technological expenses of electricity for its transmission and distribution by power grids, as well as sells electricity in organized segments of the electricity market, at a price not exceeding 75% of the price at the hours of maximum load determined by the Market Operator that allows for the SE Guaranteed Buyer to get an additional income *(previously the price has not exceeded the purchase price of electricity on electronic auctions for the fulfillment of special obligations).*

It is also necessary to note the inconsistency in the dates and terms of the regulatory documents. Thus, the Resolution of the CMU shall be valid until 31 December 2020. The Regulation on the procedure for determining the cost of service of the SE Guaranteed Buyer on ensuring an increase in the share of electricity production from alternative sources in the Law of Ukraine "On the Electricity Market" shall be valid until 1 July 2023. And legislatively guaranteed obligation concerning purchase of all volume of electricity from RES under feed-in tariff under concluded by the guaranteed buyer PPA shall be valid until 31 December 2029.

Resolutions of the NEURC "On Establishing the Tariff For Electricity Transmission Services of the PrJSC NPC Ukrenergo For 2020" No. 2668 dated 10 December 2019 and "On Establishing the Tariff for Dispatch *(Operational and Technological)* Management Services of PrJSC NPC Ukrenergo for 2020" No. 2669 dated 10 December 2019

The tariff for electricity transmission services of the NPC" at the level of 155.40 UAH/MWh *(VAT excluded)* and the structure of this tariff, as well as the tariff for dispatch *(operational and technological)* management services at the level of 10.23 UAH/MWh *(VAT excluded)* and the structure of this tariff have been established for 2020.

An ambiguous situation has emerged with the previous Resolutions of the NEURC on establishing these tariffs *(dated 7 June 2019 No. 954 "On Establishing the Tariff For Electricity Transmission Services of the NPC Ukrenergo for the Second Half of 2019", dated 7 June 2019 No. 955 "On Establishing the Tariff for Dispatch (Operational and Technological) Management Services of the NPC Ukrenergo for the Second Half of 2019", dated 12 July 2019 No. 1411 "On Establishing the Tariff for Electricity Transmission Services of NPC Ukrenergo),* which have been blocked within interim measures under the lawsuits on recognition of them as unlawful and invalid from the moment of adoption. This has created problematic situation with payments for the

"green" electricity that was supplied to the power grid in July 2019.

Resolutions of the NEURC No. 879 dated 31 May 2019, No. 1168 dated 24 June 2019 *(setting out in a new version)* **and No. 2485 dated 26 November 2019**

These Resolutions amended the Market Rules, approved by the Resolution of the NEURC No. 307 dated 14 March 2018 *(hereinafter in this subparagraph – the Market Rules).* Definitions of almost all terms used in the Market Rules have been amended. The references to all guidance *(guidance on the ancillary services, on the balancing market, on the issuance of invoices, on the registration of bilateral contracts),* which were in the previous versions of the Market Rules, have been removed. The procedure for conclusion of the agreement on settlement of imbalances has also been changed, now it is concluded after the conclusion of agreements on the provision of electricity transmission services, on the provision of dispatch *(operational and technological)* management services, the agreement on the provision of services for the compensation of reactive electricity flows *(for consumers connected to power grids of the TSO).*

Also it is clarified the procedure for the establishment, registration and termination of functioning of balancing groups; the procedure for the termination of the agreement on settlement of imbalances and termination of participation in the electricity market; consequences of non-fulfillment by market participants of obligations under the Market Rules *(acquiring the status "Pre-Default" and "Default").*

It is detailed the products traded on the Market of Ancillary Services, the procedure for conducting auctions on ancillary services.

In the template agreement on the electricity imbalances settlement, which is set out in a new version, the main amendments concern the extension of rights and clarification of the obligations of the parties to the agreement; the condition of the agreement on damages which are not subject to paying as a consequence of indirect loss, losses of profit, reduction in the production, obstacles to the fulfillment of obligations to third parties or unrealized benefit of the agreements, if such harm is not the result of gross negligence or willful intention, has been removed; the procedure for settlements under the agreement has been modified and detailed; grounds for termination of the agreement unilaterally have been revised; a 10-day period for the notification of the TSO on amendments to the information / documents of the market participant – the party responsible for the balance, has been set.

The above-mentioned Resolutions of the NEURC No. 879 and No. 2485 and Resolution of the NEURC No. 1169 dated 24 June 2019 (setting out in a new version) also amended the Day-Ahead and Intraday Market Rules, approved by Resolution of the NEURC No. 308 dated 14 March 2018 (hereinafter in this subparagraph – the DAM/IDM Rules).

Among the main amendments: definitions of the terms used in these DAM/IDM Rules have been revised; the requirements for the qualified electronic signature have been established; the procedure on settling disputes between the Market Operator and participants of the DAM/IDM has been clarified; the procedure for amending the agreement on participation in the DAM and IDM in case of amendments by the Regulator to the template has been modified *(now the participants of the DAM/IDM must within 14 calendar days from the day of receipt submit to the Market Operator one of the signed copies of an additional agreement on amendments rather than 20-day period after receiving the proposal on amendment of the agreement to notify the Market Operator about the results of its consideration – in accordance with the previous version).*

The participants of the DAM/IDM must ensure the opportunity of payment of the declared by them for the purchase on the DAM/IDM volumes of electricity through contributing the amount of funds on their escrow account before the start of bidding on DAM/IDM sufficient not only to cover the cost of purchased electricity according to the application, but also the cost of services of the Market Operator on carrying out sale and purchase operations on the DAM/IDM and commission of the authorized bank *(taking into account the amounts of value added tax that will be included to the cost of electricity and services).* And in the case of purchase of electricity – the participant of the DAM/IDM ensures the availability on the escrow account of the amount of funds sufficient for the payment of Market Operator services on carrying out sale and purchase operations on the DAM/IDM, commission of the authorized bank *(taking into account the amounts of value added tax that will be included to the cost of services).*

The procedure for amending the agreement on the sale and purchase of electricity on the DAM/IDM in case of amendment by the Regulator to template has been modified *(now the participant of the DAM/IDM within 14 days from the day of receipt from the Market Operator of the notification concerning amendments must sign an additional agreement through imposing the qualified electronic signature of an authorized person of the DAM/IDM participant, and not within the period stipulated by the Commercial Code of Ukraine, to notify the Market Operator about results of consideration of the relevant Market Operator proposal – in accordance with the previous version).*

The DAM/IDM Rules have been supplemented by a provision, under which after nine months from the date of the DAM and IDM start of work, the threshold

price for the DAM and IDM for a calendar month will be 300 % from the average electricity price that was developed on the DAM in the previous calendar month.

From 11:00 to 12:00 hours of the day, before the day of supply, the time of "closing the DAM gates" has been changed.

Grounds for conducting an additional session of bidding on the DAM have been supplemented by the following ground – the sale and purchase price has been developed at the level of or above the threshold price.

The time of "closing the IDM gates" during technical maintenance of the system has been clarified.

The procedure of reconsideration of an application for the bidding on the IDM in case of its rejection by the Market Operator and disagreement on the part of the DAM/IDM participant has been excluded.

The certificates of a sale and purchase of electricity on the DAM/IDM and the certificates of rendered services on the DAM/IDM for the previous *(reporting)* month between the Market Operator and the DAM/IDM participants shall be signed in paper form.

The procedure for determining the cost of services of the Market Operator and the procedure for their payment *(in particular, payment for carrying out sale and purchase operations on the DAM/IDM shall be paid daily, but not each 10 days)* have been clarified. The relevant amendments to the annexes to the DAM/IDM Rules have been made.

Resolution of the NEURC No. 1525 dated 18 July 2019

This Resolution amended the Resolution of the NEURC "On Approval of the Retail Electricity Market Rules" No. 312 dated 14 March 2018 and the Retail Electricity Market Rules (hereinafter in this subparagraph – the Retail Market Rule").

In particular, in the Resolution of the NEURC No. 312 dated 14 March 2018 the clause 5 have been supplemented by a provision according to which from the date of entry into force of the agreement of a consumer on the provision of electricity distribution *(transmission)* services, the DSO *(TSO)* provides commercial metering services to consumers whose commercial metering points are located on the territory of its licensed activities in accordance with the Commercial Electricity Metering Code.

In the Retail Market Rules the definitions of the terms used in these Retail Market Rules have been revised, new definitions of the terms have been established, in particular, the "private household", "territory of small distribution system", "artificial zero". Provisions of the Retail Market Rules are brought into line with the Law of Ukraine "On the Electricity Market", in particular, regarding the definition of the term "domestic consumer", the procedure for providing universal services, etc.; the procedure for providing services on ensuring reactive electricity flows has been amended; requirements for public commercial proposals of electricity suppliers have been clarified; the procedure for change of the electricity supplier to the "last hope" supplier has been modified.

The procedure for consideration of applications, complaints, claims and acts on violation of the Retail Market Rules has been amended: drawing up, accounting and storage of acts on violation, payment by the consumer of calculation documents for unaccounted electricity and consideration of controversial issues in this area; it is supplemented by the chapter "Determination of volume and cost of electricity unaccounted as a consequence of violation of these Rules".

The chapter "Supply and distribution of electricity in the conditions of small distribution system and collective domestic consumer" has been amended, in particular, the supply and distribution of electricity in the conditions of small distribution system and relationships and calculations in the conditions of collective domestic consumer have been delineated. It is established that the consumer on the territory of the collective domestic consumer has the right to sell to the universal services supplier the electricity, produced by a generating unit of private household, the installed capacity of which does not exceed the capacity, determined in accordance with the law, and the permitted *(contractual)* capacity of the consumer's object, under feed-in tariff in the volume exceeding monthly electricity consumption of such private household.

Amendments have been made to the annexes to the Retail Market Rules *(to the conditions of a template agreement on providing services for ensuring the reactive electricity flows; a template consumer's agreement on providing electricity distribution (transmission) services, a template electricity supplier's agreement on providing electricity distribution (transmission) services and etc.).*

Resolution of the NEURC "On Approval of the Procedure for Publication of Information on the Share of Each Energy Source Used for Electricity Generation and Impact on the Environment Caused by Electricity Production" No. 642 dated 26 April 2019

The Procedure for publication of information defines the requirements for the formation of information about the share of each energy source which has been used for electricity production and impact on the environment caused by electricity production, the procedure, periodicity and terms of disclosure of such information by the electricity market participants.

The Procedure for publication of information applies to electricity producers, electricity suppliers, Market Operator, TSO, as well as to market participants which carrying out sale of electricity on the organized market segments and on a bilateral basis.

It is stipulated that the producers make public the information on the share of each energy source used for electricity production under the established form *(Annex 1 to the Procedure for publication of information)* through posting on their own website. Such information is formed for the reporting periods: quarter and year, with monthly distribution. The producer shall publish the information on the share of each energy source used for electricity generation not later than the 15th day after the end of the relevant reporting period.

Producers shall also make public the information about the impact on environment caused by electricity production under the established form *(Annex 2 to the Procedure for publication of information)* through posting on their own website. Such information is formed for the reporting periods: quarter and year with monthly breakdown. The producer shall publish the information about the impact on environment caused by electricity production not later than 40th day after the end of the relevant reporting period.

The procedure for publication of information on the share of each energy source used for electricity production by the Market Operator and the TSO is determined. The procedure for the exchange of information on the share of each energy source used for electricity production during its sale under bilateral contracts has also been provided for.

Resolution of the NEURC "On Approval of the Methodology for Calculation of Payment for Commercial Electricity Metering Services Provided by the Distribution System Operator on the Territory of Carrying Out Its Licensed Activity" No. 1381 dated 9 July 2019 *(hereinafter in this subparagraph – the Methodology for calculation of payment for commercial metering services)*

The Methodology for calculation of payment for commercial metering services determines the mechanism of formation of payment for commercial electricity metering services provided by the DSO on the territory of carrying out its licensed activity.

The purpose of organization of the commercial electricity metering on the electricity market is to ensure providing market participants with complete and accurate information on the volumes of produced, released, transmitted, distributed, imported and exported, as well as consumed electricity in a certain period of time with the purpose of its further use during carrying out calculations between market participants.

The Methodology for calculation of payment for commercial metering services stipulates the functions performed by the DSO at the expense of the tariff for electricity distribution services and within the scope of its responsibility. In the Methodology for calculation of payment for commercial metering services is provided for a list of services related to ensuring commercial metering of electricity that can be provided by the DSO at the expense and at the initiative of customers.

The Methodology for calculation of payment for commercial metering services defines the principles of reimbursement of the economically reasonable expenses for commercial electricity metering services which have been provided by the DSO on the territory of its licensed activity and obtaining a reasonable level of profit. It is stipulated that the amount of payment for commercial electricity metering services which are provided by the DSO to customers may be limited by the maximum amount of payment for these services in accordance with a separate decision of the NEURC.

II. RES INCENTIVE SYSTEM: FEED-IN TARIFF, AUCTIONS

The Law of Ukraine "On Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources" No. 2712-VIII dated 25 April 2019 *(hereinafter in this subparagraph – the Law about auctions).*

The Law about auctions amends the following Laws of Ukraine:

- "On Alternative Energy Sources" dated 20 February 2003 No. 555-IV;
- "On the Electricity Market" dated 13 April 2017 No. 2019-VIII;
- "On the Regulation of Urban Development Activities" dated 17 February 2011 No. 3038-VI.

Main provisions of the Law about auctions is presented in Table 2.1.1.

Resolution of the CMU "On Introducing Competitive Conditions for Stimulating Electricity Production from Alternative Energy Sources" No. 1175 dated 27 December 2019

On 27 December 2019, the CMU adopted the Resolution "On Introducing Competitive Conditions for Stimulating Electricity Production from Alternative Energy Sources" *(hereinafter in this subparagraph – the Resolution),* by which:

- Procedure for Conducting Auctions on Allocation of Support Quota *(hereinafter – the "Procedure for conducting auctions")* was approved;
- Procedure for Selection of Operators of Electronic Platforms for Conducting Auctions on Allocation of Support Quota was approved;
- State Enterprise "PROZORRO.SALE" was determined responsible for ensuring the functioning of the electronic trade system – as the administrator of the electronic trade system.

The Procedure for conducting auctions determines:

- formation of support quotas;
- procedure for the preparation and conducting an auction on allocation of support quota to stimulate producers of electricity from alternative energy sources using the electronic trade system;
- providing and returning the irrevocable bank guarantee;
- requirements for banks providing irrevocable bank guarantees;
- procedure of functioning of electronic trade system and determining the winner under the results of conducting auction;
- procedure for concluding and publishing PPA in the electronic trade system;
- amount and the procedure of payment of remuneration to the operators of the authorized electronic platforms;
- and other issues of conducting auction on allocation of support quota.

It is stipulated that for the auction within the frames of total or additional quota, the CMU under the submission of the Ministry of Energy and Environmental Protection may propose land plots for the construction of RES objects with determined technical parameters and technical conditions for connection to the power grid *(auction with the land plots).* The procedure for preparing these proposals and the features of conducting auction with the land plots are determined by the Procedure for conducting auction. The auction with the land plot is conducted separately from the general auction.

The selection and preparation of land plots for auctions with land plots consist of the following stages:

1) at the request of the Ministry of Energy and Environmental Protection, the TSO provides proposals to the Ministry of Energy and Environmental Protection concerning power units *(territories)* which are priority for the integration of RES objects into the IPS of Ukraine;
2) the Ministry of Energy and Environmental Protection applies to the public authority/local self-government body with the proposal to allocate land plots for the construction of RES objects;
3) the public authority/local self-government body provides the Ministry of Energy and Environmental Protection with a certified in accordance with the legislation copy of the decision on allocation of the land plot with the necessary information;
4) the Ministry of Energy and Environmental Protection agrees with the TSO the technical parameters of the RES object, which will be proposed on the respective land plot and receives from the TSO/DSO the draft grid connection agreement including technical conditions. Capacity is reserved for 2 years;
5) the CMU at the submission of the Ministry of Energy and Environmental Protection, approves land plots with determined technical characteristics for an auction.

It is provided for that the auction on allocation of support quota shall be conducted not earlier than after 30 days, but not later than 60 days after publishing announcement about conducting auction.

Table 2.1.1. *The main provisions of the Law about auctions*

Period of conducting auctions	Mandatory auctions start from 1 January 2020 and end on 31 December 2029. Auctions shall be held twice a year, but no later than 1 April and 1 October.
Annual quotas for RES projects	The CMU under the submission of the Ministry of Energy and Environmental Protection shall annually, but no later than 1 December, approves annual support quotas for the next 5 years. Proposals on the size of annual quotas are prepared by the State Agency on Energy Efficiency and Energy Saving of Ukraine and the TSO, taking into account Ukraine's international commitments regarding the development of renewable energy, the Energy Strategy of Ukraine, the results of the report on conformity assessment *(sufficiency)* of generating capacities and the transmission grid development plan, as well as the status of implementation of projects of the RES objects construction. The first yearly support quota shall be set for 2020. The annual support quota shall be allocated for separate RES types as following: • for wind energy – not less than 15%; • for solar energy – not less than 15%; • for other RES types – not less than 15%. During the approval of annual support quotas, the CMU may decide to conduct technologically neutral auctions *(all the technologies using renewable energy sources will be able to participate)*. In case of non-allocation of part of the quota *(fully or partially)* for an auction for a certain type of RES, the CMU may direct the non-allocated volume to the support quota for other types of RES for allocation for the next auction.
Participants of auctions	Participation in auctions will be mandatory for: • solar projects with a capacity above 1 MW; • wind projects with a capacity above 5 MW *(except for objects with 3 wind turbines, regardless of installed capacity of such wind turbines)*. Other RES producers, regardless of installed capacity and renewable energy source, may participate in auctions on a voluntary basis.
Requirement to participate in auction	The Law about auctions contains a detailed list of documents which RES producers must provide for participation in auctions. It should be noted that the mandatory requirement for the participation in auctions is the submission of copies of the title documents for the land plot for construction of a power facility and a copy of the grid connection agreement.
Auction price	The price offer of the auction participant, producing electricity from wind energy or solar energy, cannot be higher than the rate of feed-in tariff determined for the RES object of the relevant category effective on the day of auction. The price offer of the auction participant, producing electricity from other types of RES, cannot be higher than the rate of feed-in tariff determined for the electricity produced from biomass as of 1 January 2020. The auction price for each winner shall be determined at the level of the bid proposal of the auction participant *(in eurocents per 1 kilowatt-hour)*. The auction price of the auction winner shall be fixed in EUR and its UAH equivalent, determined under the National Bank of Ukraine's official currency rate as of the date of conclusion of the power purchase agreement between the SE Guaranteed Buyer and the business entity which under results of an auction has obtained the right for support *(PPA)*.
Payment for electricity released to grid	The payment of the cost of the electricity released by an auction winner shall be carried out monthly, not later than the 20th day of the month following the estimated period. In determining the cost of the electricity to be paid, the auction price shall be converted by the SE Guaranteed Buyer into the national currency at the average official currency rate of the National Bank of Ukraine for the estimated period.
Bank guarantees	The auction participant shall submit the following irrevocable bank guarantees: **Before participation in auction.** In order to participate in an auction, the participants shall provide an irrevocable bank guarantee for the amount of EUR 5,000 per 1 MW separately for each RES object or stage of construction. **Before conclusion of the PPA.** The auction winner shall provide an irrevocable bank guarantee for EUR 15,000 per 1 MW as security for fulfilment of obligations under the PPA. **Before extension of time for commissioning.** At the initiative of the auction winner, the term for construction and commissioning of the RES object may be extended up to 1 year by providing an additional irrevocable bank guarantee for EUR 30,000 per 1 MW. The Law about auctions also provides for the procedure for returning of the above-mentioned bank guarantees.

Ensuring competition among RES producers	The mandatory condition for conducting auctions is ensuring competition among RES producers. In that regard, the Law about auctions stipulates that: • total capacity to be awarded to the winners as of the result of the auction cannot exceed 80% of the total capacity that all the participants have proposed in their bids for the auction; • maximum share of the annual quota that can be awarded to a single participant or several participants with one ultimate beneficiary owner cannot exceed 25% of the yearly quota.
Period for the RES objects to be commissioned	An auction winner shall construct and commission within two years from the day of conclusion of the PPA – for SPP, and within three years from the day of conclusion of the PPA – for RES objects producing electricity from other types of alternative energy sources. In case if the auction winner has not provided the Certificate confirming readiness of the object for operation, or the Declaration on readiness of the object for operation within the determined period, the PPA shall be invalid, and obligations under the irrevocable bank guarantee shall be fulfilled in favor of the SE Guaranteed Buyer upon its demand, except in cases, when the auction winner has extended the period for construction and commissioning as stated above.
Period of support	The period of support is 20 years from the day following the day of providing by the RES producer the Certificate issued by an authorized body, certifying the conformity of the completed by construction power facility, or the registered in accordance with the legislation Declaration on readiness of the object for operation and start of electricity supply to the grid.
Technical conditions for RES objects	For power facilities, producing electricity using alternative energy sources, technical conditions shall be valid: for SPPs – not more than two years from the day of their issuance, regardless of change of a customer; for other types of alternative energy sources – not more than three years from the day of their issuance, regardless of change of a customer. Technical conditions for power facilities, producing electricity using alternative energy sources, issued prior to the day of entry into force of the Law of Ukraine "On Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources", shall be valid: for SPPs – not more than two years from the day of entry into force of the said Law; for other types of alternative energy sources – not more than three years from the day of entry into force of the said Law. In case if the customer is the business entity, which under the results of auction has obtained the right for support, technical conditions for power facility, producing electricity using alternative energy sources, issued for such customer, shall be valid for the period of fulfillment of obligations concerning construction and commissioning of power facilities according to article 9^3 of the Law of Ukraine "On Alternative Energy Sources". Technical conditions and agreements on connection of power facilities, producing electricity from alternative energy sources, to power grids, issued/concluded prior to the entry into force of the Law of Ukraine "On Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources", are subject to bringing into line with the said Law.
Feed-in tariff	The Law about auctions also introduces a number of amendments concerning feed-in tariff rates, RES objects, to which it applies, in particular, consumers with generating units up to 150 kW and private households with generating units up to 50 kW. *Information concerning current feed-in tariff rates and its application is provided in the chapter regarding the Resolution of the NEURC "On Approval the Procedure for the Establishment, Adjustment and Termination of the Feed-in Tariff on Electricity for Business Entities, Electricity Consumers, Including Energy Cooperatives, and Private Households, Whose Generating Units Produce Electricity from Alternative Energy Sources" No. 1817 dated 30 August 2019.*

The Procedure for conducting auctions contains a detailed list of documents that shall be provided by participants along with an application to participate in the auction.

The winners are considered to be the participants which have submitted the lowest price offers according to a compiled rating within the lot for a certain type of alternative energy source, which is allocated at auction *(or regardless of the type of alternative energy source during conducting technologically neutral auctions)* for the offered by them amount of capacity of the power facility.

Within 15 business days from the date of publishing the new minutes on auction results, the winner shall sign the minutes on auction results *(containing information about the respective winner)* and shall conclude a PPA with the guaranteed buyer. It is also stipulated a list of documents that shall be provided by the winner for conclusion of a PPA within 12 business days from the date of publishing the new minutes on auction results. It is indicated a detailed list of cases when the guaranteed buyer may take a decision on refusal in signing minutes on auction results, conclusion of a PPA.

The Procedure for conducting auctions regulates in detail providing and returning the irrevocable bank guarantees, as well as determines requirements for banks providing irrevocable bank guarantees.

Resolution of the NEURC "On Approval of the Procedure for the Establishment, Adjustment and Termination of the Feed-in Tariff on Electricity for Business Entities, Electricity Consumers, Including Energy Cooperatives, and Private Households, Whose Generating Units Produce Electricity from Alternative Energy Sources" No. 1817 dated 30 August 2019 with amendments introduced by Resolution of the NEURC No. 158 dated 14 January 2020
(hereinafter in this subparagraph – the Procedure for the establishment of feed-in tariff)

Feed-in tariff will be available until 2030 for:

- projects of any capacity and type of RES technology that have been commissioned before 2020;
- projects of any capacity and type of RES technology that have signed preliminary Power Purchase Agreements under feed-in tariff *(hereinafter in this paragraph – the "Pre-PPA under feed-in tariff")* by 31 December 2019. Conditions for obtaining feed-in tariff in such case include commissioning of the power plant within 2 years from the date of signing Pre-PPA under feed-in tariff – for solar power plants, and within 3 years – for other types of RES;
- projects which will be constructed after 1 January 2020, which installed capacity is less than the capacity for which auctions are mandatory, in particular:
  - solar projects with capacity less than 1 MW;
  - wind projects with capacity less than 5 MW or wind projects with 3 wind turbines regardless of unit capacity.
- electricity consumers, including energy cooperatives, private households, whose generating units produce electricity from alternative energy sources.

The NEURC establishes feed-in tariffs for each RES producer. The rate of the feed-in tariff for the RES producer depends on:

- technology;
- capacity of the plant;
- date of commissioning.

The Law of Ukraine "On Alternative Energy Sources" establishes the ratios for determination of the feed-in tariff for each power plant.

The feed-in tariff for electricity produced by generating units of private households, consumers, including energy cooperatives, is approved by the NEURC unified for all private households, consumers, including energy cooperatives, for each type of RES.

The Procedure for the establishment of feed-in tariff contains formulas by which the fixed minimum feed-in tariff is calculated, as well as the adjustment of the feed-in tariff by the NEURC each quarter is carried out.

The fixed minimum feed-in tariff for each RES producer, electricity consumers, including energy cooperatives, and private households is calculated according to the following formula:

$$\textbf{Fixed Feed-in tariff}_{min} = \frac{\textbf{Retail tariff } \textit{(01.01.2009)} \cdot \textbf{Ratio}}{\textbf{€ } \textit{(01.01.2009)}}$$

Where:

- **Retail tariff** *(1 January 2009)* means the retail tariff for consumers of the second class of voltage in January 2009, UAH 58.46 for 1 kWh without VAT;
- **Ratio** means the ration of feed-in tariff under Law of Ukraine "On Alternative Energy Sources";
- **€** *(1 January 2009)* means UAH exchange rate to EUR, officially set by the NBU on 1 January 2009, UAH 1085.546 for EUR 100.

The feed-in tariff rate is fixed to the EUR. Feed-in tariff shall be paid in UAH. However, each quarter NEURC makes adjustment of the size of the feed-in tariff in UAH.

The feed-in tariff is subject to adjustment by the NEURC each quarter according to the following formula:

$$\textbf{Feed-in tariff} = \textbf{Fixed Feed-in tariff}_{min} \cdot €_{average\ 30}$$

Where:

- $€_{average\ 30}$ means the average rate of UAH to the EUR in the last 30 calendar days, which is preceded by the date of the last meeting of the NEURC in the previous quarter, UAH for EUR 100 per formula:

$$€_{average30} = \frac{\sum(€d\text{-}31)}{30}$$

Where:

- **€** means the UAH rate to the EUR is officially set by the NBU on the i-y date, UAH for EUR 100;
- **d** means the date of the last meeting of the NEURC in the previous quarter.

PO.038

Construction of onshore wind farms in Ukraine

in the period of the replacement of the feed-in tariff by auctions

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Abstract

The capacity of wind projects in Ukraine is 533 MW from a general capacity of facilities that produce electricity from renewable energy recourses ("RES") of 2,117 GW. The share of renewables in electricity consumption in Ukraine is 1.9%.

RES DEVELOPMENT IN UKRAINE, 2018

Notwithstanding the growth of RES on 742,5 MW in 2018 the RES deployment in Ukraine is still lower than required under the Ukrainian obligations. In particularly by 2020 Ukraine was obliged to reach targets 11% energy from RES in electricity consumption. Initially approved RES targets 2020 are not reachable by Ukraine.

However, according to the research for the Secretariat of Energy Community the possible RES targets 2030 for Ukraine are 16,6% energy from RES in electricity consumption.

Thus, Ukraine shall develop the market greatly in the coming years, which makes Ukraine very attractive for construction of onshore wind farms.

CURRENT SUPPORT SCHEME

Pursuant to current support scheme the National Energy and Utility Regulatory Commission (the "NEURC") approves the feed-in tariff ("FIT") for each RES producer at the level of retail tariff for consumers of second class of voltage in January 2009, multiplied by the ratio of FIT for each RES producer.

THE AMOUNT OF THE FIT PER MWH UNDER THE CURRENT SUPPORT SCHEME

Type	Capacity (kW)	Commissioning date	
		2017-2019 Euro per MWh	2020-2024 Euro per MWh
Wind turbine	<600	68.2	51.7
	600-2000	67.9	60.3
	>2000	101.8	90.5

The existing scheme for support of the renewable energy producers in Ukraine through FiT is not market based and available only until 2030. To reach Ukraine its RES target the stimulation scheme for RES is subject to revision.

The main drivers for change of the current support scheme for RES producers are following:

- Changing approaches to stimulating RES in the world;
- Implementation of the requirements of the Guidelines on State aid for environmental protection and energy 2014–2020;
- Support for renewable energy after 2030.

Objectives

The main objectives of this presentation:

1. Describe possible ways for realization of wind farm projects in Ukraine in transition period between replacement of the feed-in tariff by auctions;
2. Determine key recommendations for investors and developers of wind farm projects in Ukraine;
3. Discuss the possible ways for reaching the RES targets of Ukraine.

Methods

Explore the supportive scheme for realization of wind farm projects in Ukraine in the transition period between the feed-in tariff and auctions based on the following:

- Draft of the Law about auctions;
- Positions of renewable associations in Ukraine;
- Surveys of auction schemes in other countries;
- Reports by international organizations and public authorities of Ukraine.

Results

On 20 December 2018, the Verkhovna Rada of Ukraine passed in the first reading a Law on Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources No. 8449-d ("Law about auctions") for the implementation of a new supportive scheme for renewable energy producers based on auctions.

THE MAIN CONDITIONS FOR THE PROPOSED SUPPORTIVE SCHEME:

Date of implementation
1 January 2020

Participants of auctions for wind projects:
From 2020 till 2022 - >20 MW
From 2023 - >3MW

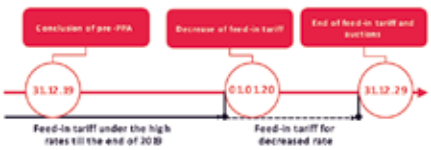
Auction scheme:
Participants submit closed offers that contain a technical proposal (the amount of capacity that the participant intends to put into operation) and a price offer (price per 1 kWh hour of electricity). Winners will be determined on the basis of simultaneous disclosure of technical and price proposals. The main criterion for choosing winners is price.

Requirements for auctions' participants:
To participate in auctions the future RES producers must provide:
- confirmed ownership/lease rights on the land plot;
- concluded grid connection agreement;
- bank guarantee of EUR 5,000 per 1 MW;
- information about the ultimate beneficiary owner.

Period for new support:
20 years

For further realization of wind farm projects in Ukraine, future producers should take into account the rules for the transition period between FiT and auctions. Wind farm projects at the active phase of construction can rely on the FiT. However wind farm projects at the stage of development must consider the possibility of participating in auctions.

WHAT KIND OF SUPPORT IS TO BE EXPECTED FOR THOSE WHO ARE CONSTRUCTING WIND FARMS IN 2019?



Notwithstanding the auctions, FiT will be available until the end of 2029 for the following RES producers:

- RES producers that put into operation wind farms before 1 January 2020;
- RES producers that put into operation wind farms after 1 January 2020 and these wind farms are not subject to auction schemes;
- RES producers that intend to produce electricity and satisfy the following requirements:
  - concluded the preliminary power purchase agreement ("pre-PPA") before 31 December 2019; and
  - put into operation a wind farm within 3 years after conclusion of the pre-PPA;
- electricity consumers, including private households generating installations which produce electricity from wind and for which an FIT is established.

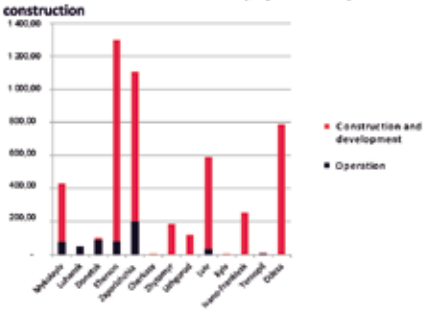
It should be noted that FiT will be available until 2030 and is subject to decrease from 2020 for wind projects by 10% with a further decrease by 1.5% each year for the next 3 years.

Conclusions

Advantages of the Ukrainian wind market in the transition period are following:

- **Wind Potential**

- **Middle-term forecast for wind projects development and construction**



RES producers shall take into account the following tips for realization onshore wind farm projects in Ukraine:

Use local content for receipt of a bonus to FIT or auction price

The bonus for local content is a premium for using equipment of Ukrainian manufacture. This bonus is fixed as an additional payment to the FIT, proportional to the level of use by the entity at the relevant facility of Ukraine-made equipment.

Bonus to FiT and auction price, %	Level of use of equipment of Ukrainian manufacture,%
5	> 30, but <50
10	>50

Use the opportunity to import equipment for onshore wind farm in Ukraine without VAT

According to recent amendments to the Tax Code, imported wind turbines are released from VAT from 1 January 2019 till 31 December 2022.

Use the rules of simplified construction procedure for onshore wind farms

Pursuant to recent amendments to the law, onshore wind farms are subject to classification within the insignificant consequence class (CC1) for construction purposes. These changes simplified the commencement of construction and launching of wind farms projects. Future RES producers are entitled to start the construction of wind farms based on a registered declaration about the commencement of construction work with the architectural and construction control authority. These changes in construction procedure have significant positive impact on the terms of realization of wind farm projects.

References

1. Journal Article "Auctions for Renewables in Ukraine: What to Expect Investors from the New Stimulation Scheme", Maryna Hritsyshyna, The Ukrainian Journal of Business Law www.ujbl.info/
2. Annual Report Ukrainian Wind Energy Association 2018 http://uwea.com.ua/

Table 2.1.2. *Feed-in tariff rate per MWh under the current support scheme*

RES	Capacity *(kW)*	Commissioning date					
		2019 EUR per MWh	2020 EUR per MWh	2021 EUR per MWh	2022 EUR per MWh	2023-2024 EUR per MWh	2025-2029 EUR per MWh
Wind power installation	< 600	58.2	51.7	50.6	49.5	49	45.2
	600 – 2,000	67.9	60.3	59.2	58.2	57	52.8
	> 2,000	101.8	90.5	90.5	90.5	90.5	79.2
SPP	10 MW or < 10 MW	150.2	112.5	108.8	105	101.2	97.5
	> 10 MW	150.2	112.5	108.8	105	101.2	97.5
Biomass / Biogas PP	123.9						
Micro HPP	< 200	174.5	157.2				139.5
Mini HPP	200 – 1,000	139.5	125.5				111.5
Small HPP	1,000 – 10,000	104.5	94.2				83.5

It should be noted that from 2020 feed-in tariff will be decreased:

- **for solar:** by 25% with a further decrease of 2.5% each year for 3 years;
- **for wind:** by 10% in 2020 and by 10% in 2025.

The feed-in tariff for biomass/biogas will be left without changes.

It should be noted that on 14 January 2020 the NEURC by the Resolution No. 158 amended the Procedure for the establishment of feed-in tariff. The amendments came into force on 21 January 2020.

Decisions on establishment of feed-in tariffs for future RES producers, electricity consumers, including energy cooperatives, private households are taken at a NEURC meeting, which is conducted in the form of a public hearing.

For establishment of feed-in tariff, the future RES producer shall submit an application *(standard form)* to NEURC and the following documents:

- explanatory note with detailed information about business entity *(form of ownership, installed capacity, useful output of electricity and other characteristics of the RES object);*
- summary calculation of RES object construction *(the cost of generating equipment, cost of construction and adjustment works, cost of connection of power installations to power grids, cost of energy equipment and facilities located at the RES object, which is an integral part of the RES object);*
- copy of explanatory note for the RES object construction project;
- copy of technical conditions for grid connection of the RES object;
- copy of the registered Notification on Commencement of Construction Works or Construction Permit, issued according to requirements of the Order of Execution of Preparatory and Construction Works, approved by the Resolution No. 466 of the CMU of 13 April 2011;
- copy of registered Declaration of Readiness of Object for Operation or Certificate that confirms compliance of completed RES object with design documentation and confirming its readiness for operation with the relevant act of readiness for operation, issued according to the Order of Acceptance into Operation of Completed Construction Objects, approved by the Resolution No. 461 of the CMU of 13 April 2011;
- general photo of the RES object in electronic form.

In case of an application of the business entity concerning establishment/adjustment of feed-in tariff for electricity, producing from solar energy by the RES object which is mounted *(installed)* on roofs and/or facades of buildings and other capital facilities, to the application concerning establishment/adjustment of feed-in tariff shall be attached documents, confirming that the facilities/buildings on the roofs and/or facades of which such RES object is mounted (installed), are capital *(excerpt from the State Register of Property Rights to Real Estate etc.).*

Additionally, the RES producer shall provide a copy of a concluded pre-PPA, in case of commissioning of the RES object after 31 December 2019 and producing electricity from:

- solar energy, if a solar power plant has installed capacity greater or equal to 1 MW;
- wind energy, if a wind power plant has installed capacity greater or equal to 5 MW, or consists of 3 or more wind units regardless of the installed capacity.

In case of any increase of total installed capacity of generating equipment at the RES object with an established feed-in tariff following reconstruction, technical re-equipment or capital repair through additional installation of equipment or its replacement, the RES producer shall submit to NEURC the application regarding establishment/adjustment of feed-in tariff and the required documents.

The Resolution provides the time limits within which the NEURC must consider the licensee's application and take a decision on establishment or refusal to establish a feed-in tariff.

Resolution of the NEURC "On Approval of Regulatory Acts Governing the Activities of the Guaranteed Buyer and Purchase of Electricity Under Feed-in Tariff" No. 641 dated 26 April 2019 *(hereinafter in this subparagraph – the Resolution No. 641*) **with amendments according to Resolution of the NEURC No. 2802 dated 13 December 2019**

By the Resolution No. 641 was approved, in particular:

- Procedure for Purchase of Electricity Under Feed-in Tariff;
- Template Power Purchase Agreement Under Feed-in Tariff Between the Guaranteed Buyer and Business Entity Producing Electricity Using Alternative Energy Sources *(hereinafter – the "PPA under feed-in tariff").*

With the introduction of the new electricity market, the SE Guaranteed Buyer became the legal successor of the SE Energorynok. Therefore, the Procedure for Purchase of Electricity Under Feed-in Tariff regulates in detail the procedure of replacement of the party of obligation from the SE Energorynok with the SE Guaranteed Buyer under the previously concluded PPA under feed-in tariff. The Procedure for Purchase of Electricity Under Feed-in Tariff has introduced the performance of advance payments by the SE Guaranteed Buyer to the RES producers.

For fulfilment of requirements of the Laws of Ukraine "On the Electricity Market" and "On Alternative Energy Sources", the NEURC on 13 December 2019 adopted the Resolution No. 2802, which amended the Resolution No. 641, in particular:

- the Procedure for Purchase by the Guaranteed Buyer of Electricity Produced from Alternative Energy Sources *(hereinafter – the "Procedure for RES producers")* was approved, through setting out in a new version the Procedure for Purchase of Electricity Under Feed-in Tariff;
- the PPA under feed-in tariff was set out in a new version.

In connection with the introduction of support system in the form of auctions, the Procedure for RES producers regulates the sale of electricity under feed-in tariff and at auction price.

Table 2.1.3. *Procedure for selling and purchasing electricity under feed-in tariff*

General conditions concerning sale and purchase of electricity	**For receiving payments under feed-in tariff or at auction price, RES producer shall:** • obtain license for carrying out commercial activity on electricity production; • obtain feed-in tariff *(for the PPA under feed-in tariff);* • become a participant of the electricity market; • conclude with the SE Guaranteed Buyer the PPA under feed-in tariff or at auction price; • enter on the basis of a PPA into a balancing group of the SE Guaranteed Buyer; • carry out operations on sale and purchase of electricity only with the SE Guaranteed Buyer.
Required documents for conclusion of the PPA under feed-in tariff for the candidate for RES producers with an established feed-in tariff	**For conclusion of the PPA it is required to provide the following documents:** • an application on conclusion of a PPA in free form; • certified in accordance with the legislation a copy of charter; • certified in accordance with the legislation copies of documents confirming powers of a director or an authorized person to conclude a PPA; • example of signature of a director or an authorized person; • the list of commercial metering points of electricity for each object of the candidate for RES producers; • a single-line diagram of each object of the candidate for RES producers indicating commercial metering points of electricity and boundaries of balance affiliation of power grids; • an application in free form on choosing dispute resolution procedure.

Required documents for conclusion of the Pre-PPA under feed-in tariff for candidates for RES producers which are not market participants and/ or for which the feed-in tariff is not established	**For conclusion of the Pre-PPA it is required to provide the following documents:** • an application on conclusion of a PPA in free form; • certified in accordance with the legislation a copy of charter; • certified in accordance with the legislation copies of documents confirming powers of a director or an authorized person to conclude a PPA; • example of signature of a director or an authorized person; • certified in accordance with the legislation copies of title documents concerning ownership regarding a land plot or an object of architecture, or the superficies agreement for construction of the RES object; • certified in accordance with the legislation copies of documents giving the right to perform construction works; • certified in accordance with the legislation a copy of the concluded grid connection agreement; • information concerning RES objects which will be constructed and/or commissioned with indicating a date of commissioning, location of the RES object, type of energy source and capacity.
Procedure for conclusion of the PPA under feed-in tariff	Within 10 business days from the day of receipt from the candidate for RES producers of the above-mentioned documents, the SE Guaranteed Buyer shall provide to the candidate for RES producers two copies of a signed PPA. Within 3 business days from the day of receipt of these two copies of the PPA, the RES producer shall sign both copies and return them to the SE Guaranteed Buyer for further processing.
Payments	**The SE Guaranteed Buyer shall perform payments for released electricity to RES producers as follows:** • for the first 10 days of electricity generation – by the 15th day of the estimated month; • for the first 20 days of electricity generation – by the 25th day of the estimated month; • for the remaining part of produced electricity – within 2 days after the signing of a sale and purchase certificate and approval by the NEURC of the amount of cost of the service on ensuring increase the share of electricity production from alternative sources.
Forecasting volumes of electricity output	By 09:00 the day before the trading day, RES producers shall provide the SE Guaranteed Buyer with hourly daily schedules of electricity output and information about available capacity of generating units divided by technologies, tariffs/generation types/by renewable source type and by geographic regions. RES producers starting from 15:00 on the day before trading day, but no later than 2 hours and 45 minutes before the estimated period, shall provide the SE Guaranteed Buyer with an updated schedule of electricity output and available capacity of generating units divided by technologies, tariffs/generation types/by renewable source type and by geographic regions for each estimated period of the trading day. In case of emergency stop at a generating unit with a capacity of more than 1 MW or emergency decrease of its available capacity by more than 1 MW, the RES producer within 24 hours shall provide the SE Guaranteed Buyer and TSO with notification regarding such stop with reasons for the emergency stop and forecasted date of recovery of work of the generating unit.
Contributions to cover arbitration fees of the SE Guaranteed Buyer	In case of choosing arbitration as dispute resolution procedure, RES Producer shall pay contributions to cover arbitration fees of the SE Guaranteed Buyer. If the RES producer has not chosen arbitration, then paying such contributions is not required. *The Procedure for RES producers regulates in detail conditions concerning paying such contributions.*
The main provisions of the PPA under feed-in tariff	
Obligations concerning sale and purchase of electricity under feed-in tariff	The producer under feed-in tariff undertakes to sell, and the SE Guaranteed Buyer undertakes to purchase all released electricity in commercial electricity metering points of the seller under the established to him feed-in tariff taking into account a premium to the tariff.
Duration	Until 2030.

Dispute resolution	All disputes arising from or in connection with the PPA shall be resolved, primarily through negotiations. The parties may contact the Energy Community Secretariat's Dispute Resolution and Negotiation Centre for assistance in the amicable resolution of such disputes in the order established by the Procedural Act 2016/3/ECS of the Energy Community Secretariat on the establishment of the Dispute Resolution and Negotiation Centre. If the dispute cannot be resolved within the period provided for by the Procedural Act 2016/3/ECS of the Energy Community Secretariat, such dispute may be referred at the option of the RES producer to arbitration under the conditions set out below or to the Commercial court of Ukraine.
Arbitration under the Arbitration Rules of the International Chamber of Commerce with the place of arbitration in Paris, French Republic	Disputes may be referred to arbitration under the Arbitration Rules of the International Chamber of Commerce with the place of arbitration in Paris, French Republic, under fulfilling simultaneously the following conditions: 1) the seller under feed-in tariff is an enterprise with foreign investments as determined by the Commercial Code of Ukraine; 2) during the conclusion of the PPA, such RES producer indicated in an application on choosing arbitration as dispute resolution procedure. All disputes, which are referred for resolution to arbitration shall be considered by the International Court of Arbitration of the International Chamber of Commerce under the Arbitration Rules of the International Chamber of Commerce by three arbitrators appointed according to the indicated Rules. In such case: • arbitration location is Paris; • language of arbitration proceeding is English; • applicable law for the PPA is substantive law of Ukraine. *Any arbitral award is final and binding for fulfillment by parties. Each party has the right to refer to the competent court for recognition and enforcement of the arbitral award.*
Liability of the SE Guaranteed Buyer / RES producer	In case of non-performance of obligations, the SE Guaranteed Buyer / RES producer shall: • pay default interest of 0.1% of the non-performed payment *(but not more than the double discount rate of the NBU)* for each day of delayed payment; • pay an additional fine of 7% of the non-performed payment, if the delay exceeds 30 days.
Assignment	Transfer of rights and obligations under the PPA may be performed after obtaining the written consent of the other party under the PPA. The PPA contains the detailed, but not exclusive the list of conditions in the presence of which the SE Guaranteed Buyer gives such consent. It should be noted that the conditions indicated in the PPA are not exclusive and therefore other conditions may also be applied.
Amendments to the PPA	In case of amendments to the legislation or amendments to the template PPA, the SE Guaranteed Buyer publishes such amendments on its website and sends an additional agreement to the RES producer regarding bringing the PPA into line with the new version of the PPA in two copies. Within 15 business days from the day of receipt from the SE Guaranteed Buyer of two copies of the additional agreement, the RES producer shall sign them from its part and return to the SE Guaranteed Buyer for further execution two copies of the signed additional agreement.

Resolution of the NEURC "On Approval of Template Power Purchase Agreement Between SE Guaranteed Buyer and Business Entity that has Obtained the Right for a Support Through Auction" No. 2803 dated 13 December 2019 *(hereinafter – the PPA at auction price).*

State support for RES producers that have obtained the right for a support through auction is carried out on the basis of the concluded PPA at auction price. Procedure of conclusion of the PPA at auction price with an auction winner is regulated by the Procedure for conducting auction on allocation of support quota which is approved by the CMU.

In general, the PPA at auction price is identical to the main provisions of the PPA under feed-in tariff. Among features of the PPA at auction price can be highlighted:

- fixing in the text of the PPA the auction price in EUR and its UAH equivalent, as well as RES object capacity and RES type;
- the opportunity to extend period of RES object construction and commissioning for one year. This requires the relevant amendments to the PPA and providing by the auction winner of an additional irrevocable bank guarantee;
- the duration of the PPA shall be set for the period of support of the auction winner in accordance with the Law of Ukraine "On Alternative Energy Sources".

Amendments to the Procedure For Determining the Level of Use of Equipment of Ukrainian Production on Power Facilities, Including Commissioned Stages of Construction of Power Plants *(Launch Complexes)* **Producing Electricity From Alternative Energy Sources** *(Except Blast-furnace and Coke Gas and, in Case of Using Hydropower – Only at Micro-, Mini- and Small Hydropower Plants),* **and Establishing the Respective Premium to the Feed-in Tariff, approved by Resolution of the NEURC No. 2529 dated 26 November 2019** *(hereinafter in this subparagraph – the Procedure).*

The amendments have been made to the Procedure, approved by the Resolution of the NEURC No. 2932 dated 10 December 2015, according to which the said Procedure is extended to the establishment of the respective premium to the auction price. Besides, the list of documents required for establishing premium was supplemented by the following documents: a conclusion on the origin of goods; an expert conclusion regarding determining the UCG FEA code for the relevant item of equipment; a copy of registered Declaration on Readiness of Object *(stage of its construction (launch complex)) for Operation or Certificate certifying the conformity of the completed by construction object (stage of its construction (launch complex))* with the design documentation and confirming its readiness for operation.

The Procedure was supplemented by the chapter on the termination of the premium to feed-in tariff or auction price upon observing the level of use of equipment of Ukrainian production, so the grounds for termination of the premium are: an application of the business entity; expiration of the feed-in tariff; expiration of support of electricity producers from alternative energy sources; cancellation of the license for carrying out commercial activity on electricity production; recognition of the information contained in the documents as unreliable.

Resolution of the NEURC "On Approval of the Order on Sale and Accounting of Electricity Produced by Consumers, as well as Settlements for it" No. 2804 dated 13 December 2019 *(hereinafter in this subparagraph – the Order for consumers)*

By the Order for consumers is determined that the consumer under feed-in tariff is a consumer, including energy cooperative, whose generating units have installed capacity not exceeding 150 kW, intended for the generation of electricity from solar energy and/or wind energy, from biomass, biogas, from hydropower, geothermal energy.

Prior to approval of the Order for consumers, the order of the activities of consumers has not been regulated. As well as RES producers under feed-in tariff, consumers will sell electricity under feed-in tariff to the SE Guaranteed Buyer, but only in volumes exceeding their monthly consumption.

The Order for consumers contains the detailed list of documents, which the consumer shall provide to the SE Guaranteed Buyer for conclusion of the PPA under feed-in tariff.

For carrying out sale and purchase of electricity under feed-in tariff, the consumer must become a participant of the electricity market, conclude with the SE Guaranteed Buyer the PPA under feed-in tariff, enter on the basis of this PPA into the balancing group of the SE Guaranteed Buyer and carry out operations on sale and purchase of electricity only with the SE Guaranteed Buyer.

Unlike RES producers under feed-in tariff, consumers do not need to obtain license for carrying out commercial activity on electricity production. However, it should be noted that consumers have the same obligations as RES producers under feed-in tariff concerning forecasting volumes of electricity output and reimbursement of the cost of the electricity imbalance settlement.

III. REGULATORY ACTIVITY

The Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine on Ensuring Constitutional Principles in the Fields of Energy and Utilities" No. 394-IX dated 19 December 2019

The Law has been adopted in accordance with the requirements of the Constitutional Court of Ukraine decision No. 5-p/2019 dated 13 June 2019, by which certain provisions of the Law of Ukraine "On the National Energy and Utility Regulatory Commission" were declared as not in conformity with the Constitution of Ukraine *(are unconstitutional)* and will terminate legal force on 31 December 2019.

Amendments to the Law of Ukraine "On the National Energy and Utility Regulatory Commission"

Instead of an independent state body, the NEURC will become a permanent central executive body with special status created by the Cabinet of Ministers of Ukraine. Accordingly, all the powers of the President of Ukraine and most of the relevant powers of the Parliament regarding the NEURC are transferred to the Cabinet of Ministers of Ukraine. In particular, powers to determine the composition of competitive commission for the selection of candidates for the positions of NEURC members *(hereinafter – the "Competitive Commission"),* to organize the Competitive Commission's activity and the process of selecting NEURC members including information disclosure *(publication),* power to appoint NEURC members and terminate their authorities, and others were transferred to the Cabinet of Ministers of Ukraine.

The basis of transparency of the NEURC activity changed: NEURC approves its budget independently without public discussion of its draft, the NEURC report on used funds is no longer submitted to the Parliament, and is published on the NEURC website; minimum time period for submitting comments and suggestions to NEURC draft acts reduced from 1 month to 10 days; NEURC decisions with the features of regulatory acts no longer require publishing in official media; they take effect after publishing on the NEURC website; the live broadcast of the Competition Commission meeting on official websites *(as it was prescribed in the previous edition)* is no longer provided for by the Law about NEURC.

Amended rules regarding the process of selection of NEURC members: one and the same person cannot be elected NEURC Chairman for two consecutive terms; the Law about NEURC was supplemented by a list of grounds for termination of powers of the NEURC Chairman ahead of schedule; rules governing the periodic rotation of NEURC members, rotation scheme, and on the prohibition of one person from being a member of NEURC for more than two terms, are excluded from the Law about NEURC.

NEURC rights and functions have been clarified, supplemented and brought into line with existing legislation on licensing, electricity and natural gas markets: NEURC can change the prices *(tariffs)* it sets based on the results of inspection/monitoring; determine conditions, procedure and amount of compensation to consumers applicable in cases of non-compliance with established standards and requirements for the quality of consumer service; investigate breaches regarding the functioning of electricity and natural gas markets and set cap prices on electricity market segments.

The maximum regulatory contribution rate increased from 0.1% to 0.15% of the contribution payer's net income.

NEURC powers regarding conducting inspections of business entities are expanded. The Law is supplemented by the following basis for conducting unscheduled inspections: verification of the accuracy of information and data provided to NEURC; substantiated appeal of an individual / legal entity on violation of his legal rights; substantiated appeal of business entity or consumer on violation of the law on access to networks, violation of license conditions; identification of misuse of funds provided for by the established tariff structure and/or approved investment program.

For NEURC a 30-day period has been set from the day a breach was discovered to impose sanctions for breach of license conditions, energy and utilities legislation. The statute of limitations for liability for violation of licensing conditions, energy and utilities legislation is 5 years from the day of the breach, and in the case of a continuing breach – from the day the breach is completed. The Law was supplemented by NEURC's right to take decisions on deferred or instalment payment of a fine imposed on the business entity based on its application.

Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine in Connection With the Adoption of the Law of Ukraine "On Standardization" No. 124-IX dated 20 September 2019

The Law No. 124-IX will become effective on 16 October 2020. According to this Law, art. 7 "Standardization in the field of alternative energy sources", as well as any references to standards, will be excluded from the Law of Ukraine "On Alternative Energy Sources".

Resolution of the CMU "Some Issues of Optimization of the Central Executive Bodies System" No. 829 dated 2 September 2019

The Ministry of Ecology and Natural Resources is renamed to the Ministry of Energy and Environmental Protection of Ukraine. The Ministry of Energy and Coal Industry is reorganized through accession to the Ministry of Energy and Environment Protection. The Ministry of Energy and Environmental Protection is the legal successor of the property, rights and duties of the Ministry of Energy and Coal Industry.

Resolution of the NEURC No. 1481 dated 18 July 2019

This Resolution amends the Procedure for Conducting Open Discussion of Draft Decisions of the National Energy and Utility Regulatory Commission, approved by the Resolution of the NEURC No. 866 dated 30 June 2017. According to the amendments, it is established that the Procedure for conducting open discussion of draft decisions of NEURC does not apply to draft decisions on establishing feed-in tariff.

Resolution of the NEURC "On Amendments to Licensing Conditions for Carrying Out Commercial Activity on Electricity Production" No. 581 dated 22 April 2019 *(hereinafter in this subparagraph – the Resolution No. 581)*

After completion of RES object construction, the future RES producer may apply to NEURC to obtain a license for electricity production.

Starting from 1 July 2019 *(start of operation of the new electricity market),* RES producers operate on the basis of new licenses issued under the License Conditions for Carrying Out Commercial Activity on Electricity Production, approved by Resolution of NEURC No. 1467 dated 27 December 2017 *(hereinafter in this subparagraph – the "Licensing Conditions 1467").*

According to Licensing Conditions 1467, a license to produce electricity must be obtained if:

- installed capacity of electricity generating equipment is 5 MW and more; or
- future RES producer intends to sell electricity to the SE Guaranteed Buyer under feed-in tariff regardless of installed capacity of the RES object.

Future RES producers which have obtained the right for support through auction must obtain a license for electricity production as well.

According to Licensing Conditions 1467, in order to obtain a license for electricity production, the future RES producer shall submit an application *(standard form)* to NEURC and the following documents:

- copy of the passport of a director *(or a representative)*;
- duly certified copies of documents confirming ownership or other rights to use means for the production of electricity in the places of commercial activity;
- duly certified copies of pages from the technical passports of electricity generating equipment confirming installed capacity of electricity generating equipment *(in case of absence of technical passport – other documents confirming its technical characteristics);*
- note with information about places and means for production of electricity *(standard form);*
- scheme for RES object connection to the grid with indication of electricity metering equipment.

We draw your attention that according to the position of NEURC the documents confirming right to use means for the production of electricity include a Certificate or registered Declaration of readiness of object for operation. It is necessary to obtain a Certificate for RES objects with CC2 and CC3 class of consequences. For objects with CC1 class of consequences, it is necessary to register a Declaration of readiness of object for operation.

NEURC shall issue a license for electricity production within 10 business days after receipt of the application and other required documents.

Resolution No. 581 has simplified the conditions for obtaining a license to work from 1 July 2019 for licensees for electricity production who have received licenses before the entry into force of the Law of Ukraine "On the Electricity Market", if the license getter meets the following criteria:

- has a valid license for electricity production, issued before the day of entry into force of the Law of Ukraine "On the Electricity Market" *(11 June 2017);*

- does not change the places and means of conducting commercial activity in accordance with the valid license;
- according to paragraph 2 of the Resolution of the NEURC dated 22 March 2017 No. 309 "On Approval of Licensing Conditions for Carrying Out Commercial Activity on Electricity Production" has submitted the documents and information specified in part 3 of art. 15 of the Law of Ukraine "On Licensing of Types of Commercial Activity".

In the case of compliance with the above criteria for obtaining a new license for electricity production from the date of start of operation of the new electricity market, the license getter shall only add to the application for obtaining license:

1) a note about places and means of conducting commercial activity for the production of electricity, given in annex 2 to the Licensing Conditions 1467;
2) an application for cancellation of the valid at the moment of submitting of the license for electricity production from the date of entry into force of the new license.

Resolution of the NEURC "On Amendments to the Licensing Conditions for Carrying Out Commercial Activity for the Performance of Functions of the Guaranteed Buyer" No. 2029 dated 3 October 2019

The amendments clarify the definition of "cross-subsidization", according to which the transfer of funds for commercial activity carried out within the framework of the fulfillment of special obligations to ensure public interest in the case of their assignment by the Cabinet of Ministers of Ukraine does not fall under the definition of "cross-subsidization".

Resolution of the NEURC "On Approval of Amendments to the Procedure of Control Over Compliance by Licensees Carrying Out Activity in the Fields of Energy and Utilities With Legislation in the Respective Fields and Licensing Conditions, approved by Resolution of the NEURC No. 428 dated 14 June 2018" No. 1952 dated 13 September 2019 *(hereinafter in this subparagraph – the Procedure)*

It is established that inspections may be conducted at the premise of NEURC or its territorial body. The Procedure expressly states that the form of the act of inspection is a unified form. The lists of questions of inspection are the same for business entities of all degrees of risk concerning which state control measures are carried out.

The procedures for carrying out unscheduled on-site and off-site inspections are distinguished. The Procedure is supplemented by the chapter on unscheduled inspections before deciding on the merits of the controversial issue *(during the settlement of disputes, in the form of on-site and off-site inspection).*

It is excluded as a ground for conducting an unscheduled on-site inspection – a court decision, at the request of officials in the cases stipulated by the Criminal Procedural Code of Ukraine.

It is established that anonymous requests cannot be the ground for any inspection, not just unscheduled.

The maximum period for submitting an act on the results of inspection *(in case of identifying violations)* to a meeting of NEURC was extended – from 10 to 30 business days from the day of receipt by licensee of the act on results of inspection. It is also established that this period may be extended at the substantiated request of the licensee.

The Procedure is supplemented by the condition that in the case of full or partial elimination by the licensee of violations of the license conditions identified during the inspection, until the moment of taking a decision at the NEURC meeting, which is necessarily confirmed by the relevant documents, the fact of elimination is taken into account when deciding on the application to the licensee sanctions and/or regulatory impact measures.

It is established that the validity of license may be suspended until the moment of elimination by the licensee of the identified violations, but not more than for one year from the moment when the licensee is informed about the relevant decision of NEURC on imposing sanctions.

The period for NEURC to make a decision on cancellation of the license has been changed – from "within 5 business days from the day of identifying the grounds for cancellation" to "within 5 business days from the day of receipt of written explanations and substantiations from the licensee to the act that is the basis for cancellation of the license, but not later than 30 business days from the day of receipt of such act by the licensee".

The Procedure is supplemented by a new annex – a form of the Act, which is the basis for deciding on the cancellation of a license, drawn up as a result of a scheduled *(unscheduled)* measure of state supervision *(control)* concerning compliance by a business entity with the requirements of legislation and licensing conditions.

Resolution of the NEURC "On Approval of the Rules for Consideration of Consumers' Applications Concerning Actions of Business Entities Carrying Out Activities in the Fields

of Energy and Utilities, and the Settlement of Disputes" No. 1333 dated 2 July 2019

The Resolution approves rules defining the procedure for consideration by NEURC of applications of consumers or persons, which have intention to become them, concerning violations of their rights and interests by business entities carrying out activities in the energy and utilities fields, state regulation of which is carried out by NEURC, and settlement of disputes.

Resolution of the NEURC "On Approval of the Order for Settlement of Disputes Arising Between Business Entities Carrying Out Activities in the Fields of Energy and Utilities" No. 156 dated 5 February 2019 with amendments in accordance with the Resolutions of NEURC No. 2608 dated 6 December 2019 and No. 2901 dated 20 December 2019

The approved order defines the procedure for the free-of-charge pre-trial settlement of disputes by NEURC concerning violations of rights and interests arising between the business entities carrying out activities in the fields of energy and utilities and the state regulation of which is carried out by NEURC *(except consumption by business entities of energy and/or utilities).*

For settling dispute it is possible to apply to NEURC within one year from the date of occurrence of such dispute, but not later than one month from the date of familiarization of the business entity and its disagreement with the decision adopted/answer provided *(not provided).*

In case other party does not join the pre-trial dispute settlement procedure, NEURC shall notify the applicant within 10 business days about the refusal of the pre-trial settlement of the dispute and about the beginning of consideration of the application as a substantiated appeal of the applicant.

Under results of consideration of the dispute, NEURC at a meeting, which is conducted in the form of an open hearing, may take a decision on: termination of the consideration of dispute; obligation to end violations of legislation in the field of energy and utilities; obligation to end the breach of licensing conditions; imposing a fine.

IV. GRID CONNECTION

Resolution of the CMU "Some Issues of Strengthening the Control of Compliance with the Legislation on Connection to the Power Grids" No. 932 dated 23 October 2019

The list of tasks of the State Inspectorate for Energy Supervision of Ukraine is supplemented by the following:

- to conduct monitoring and perform control over consideration of controversial issues concerning connection of customers' electrical installations to the power grids on a "one-stop-shop" principle;
- to consider complaints of customers.

Resolution of the NEURC No. 2595 dated 3 December 2019

This Resolution amends the Distribution System Code approved by Resolution of the NEURC No. 310 dated 14 March 2018 *(hereinafter in this subparagraph – the Distribution System Code).*

The preamble clarifies that validity of the Distribution System Code applies to the TSO. The condition that the technical conditions for connection are constituent part of the task for design has been excluded.

The procedure for connection of the customer's electrical installations to power grids of the business entity is changed: such connection shall be performed with the involvement of the DSO through concluding with him an agreement on non-standard connection and obtaining from him the technical conditions for connection.

The feasibility study of choosing a connection scheme is developed at the expense of a customer *(including in case of disagreement of the customer with the proposed by the DSO point from which the customer's demand for the declared capacity can be ensured),* the initial data for development of the feasibility study is provided free of charge by the DSO.

Connection of temporary *(seasonal)* objects to power grid no longer requires approval of the design documentation; connection of the construction electric current collectors is carried out in the established

order without paying fee for connection. The connection of the customer's electric current collectors is carried out after payment of services for preparation and issuance of technical conditions for connection, as well as after providing the DSO with the documents confirming conclusion by the customer of the relevant agreements *(or amendments to current agreements)* in accordance with the requirements established on the retail electricity market, and documents confirming receipt by the customer of the service for installation of the commercial electricity metering node in accordance with the requirements of the Commercial Metering Code.

A 20-day term for customers is established for signing the connection agreement and technical conditions for connection and returning them to the DSO for registration, as well as consequences of non-compliance with these requirements *(the agreement shall be deemed as not concluded, technical conditions – such which have not entered into force).*

Cases of termination of electricity distribution are supplemented by the following: in case of late payment by the customer of the final settlement in accordance with the terms of the connection agreement *(for cases of change of technical parameters).*

It is changed the conditions of the standard form of agreement on standard connection to power grids of the distribution system, of the standard form of agreement on "turnkey" non-standard connection to power grids of the distribution system / with designing of a linear part of the connection by the customer, the standard form of application on connection of electrical installation of a certain capacity, standard forms of technical conditions of standard and non-standard connection, the Distribution System Code is supplemented by a new annex – standard form of application on reimbursement of funds and payment of a penalty for breach of time frames for providing service on connection.

Resolutions of the NEURC No. 1120 dated 21 June 2019 and No. 2267 dated 5 November 2019

These Resolutions amend the Transmission System Code, approved by Resolution of the NEURC No. 309 dated 14 March 2018 *(hereinafter in this subparagraph – the Transmission System Code).* The procedure for submitting and considering proposals regarding amendments to the Transmission System Code is changed. The rule concerning annual generalization in the relevant Report of the research results on the assessment of conformity *(sufficiency)* of generating capacities, which is performed by the TSO, was excluded.

A copy of the construction passport / urban planning conditions and restrictions with the graphic part with an indication of the location, capacity and category of reliability of the electricity supply for each Customer's object *(for objects connecting for the first time)* are excluded from the list of documents submitted along with the application for connection to power grids of the TSO.

The definition of the body on conformity assessment has been generalized to the requirements of the Transmission System Code *(the body on conformity assessment),* organizational and technical and qualification requirements for bodies on conformity assessment have been established.

In the chapter "Provision/ use of ancillary services to the transmission system operator / operators" general provisions are set out in a new version, the chapters on the principles for providing ancillary services, requirements for providers of ancillary services and their verification are excluded *(the procedure for verifying the electrical installations of ancillary services providers is defined in annex 7 to the Transmission System Code).*

The access to the transmission system is provided on the basis of the concluded agreement on the provision of electricity transmission services, and the activity in the electricity market without concluding agreement on the provision of dispatch *(operational and technological)* management services in cases stipulated by the Transmission System Code is not allowed.

Non-payment and/or incomplete payment of services under agreement on the provision of dispatch *(operational and technological)* management services is now also a reason for termination of transmission of electricity under initiative of the TSO.

The procedure for concluding agreement on the provision of services on electricity transmission and on dispatch *(operational and technological management)* has been changed, now they can be concluded before the user acquires the status of an electricity market participant, and condition that these agreements are public has been removed.

Amendments have been made to the certain annexes to the Transmission System Code *(to the standard forms of applications on connection of electrical installations to the transmission system, template agreement on the provision of dispatch (operational and technological)* management services *(in particular, has been supplemented by provisions on the interaction of the TSO and Producer / DSO in the dispatch (operational and technological) management), template agreement on the provision of electricity transmission services).* Transmission System Code has been supplemented by a new annex "Procedure for Inspecting and Conducting Tests of Electrical Installations of Ancillary Services Provider".

Resolution of the NEURC No. 1380 dated 9 July 2019

The Resolution has approved amendments to the Methodology for Calculating the Cost of Works on Connection of Consumers' Electrical Installations to the Licensee's Power Grids and Other Additional Works and Services Related to the Licensed Activity, approved by Resolution of the NEURC No. 1618 dated 29 December 2017 *(hereinafter in this subparagraph – the Methodology for calculating the cost of works for connection of consumers' electrical installations).*

The methodology for calculating the cost of works on connection of consumers' electrical installations establishes a single procedure for calculating the cost of performing additional works *(services)* related to electricity distribution activities.

Such type of works as providing information services to licensees who perform supplying electricity on the ungoverned territory has been removed from the list of additional works *(services)* provided exclusively by the licensee on electricity distribution and related to his licensed activity.

Fee for services on the development of technical conditions and preparation of draft connection agreement is not charged *(except for cases of connection of temporary (seasonal)* facilities to power grid), and the cost is taken into account during calculating connection fee rates. The same concerns such service as negotiation of a project of electricity supply of object for compliance with provided technical conditions and/or valid regulatory acts, where stating that the fee for this service is not charged, and the cost is taken into account during calculating connection fee rates.

The Procedure for Financing Services on Connection of Electrical Installations to Power Grids, approved by Resolution of the NEURC No. 1467 dated 21 November 2013, ceased to be effective pursuant to Resolution of the NEURC No. 331 dated 14 March 2019.

V. CONSTRUCTION, ECOLOGY, LAND

The Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine on Improving the Procedure for Providing Administrative Services in the Field of Construction and Establishing the Unified State Electronic System in the Field of Construction" No. 199-IX dated 17 October 2019

The Law amends certain laws of Ukraine, in particular the Law of Ukraine "On the Regulation of Urban Planning Activity" and establishes a Unified state electronic system in the field of construction *(hereinafter referred to as "electronic system")* as part of urban cadaster.

The electronic system consists of: Register of construction activities, electronic cabinet of user of the electronic system, portal of the electronic system.

One of the principles of creation and operation of an electronic system is the necessity to enter to it an information on urban planning conditions and restrictions, task for design and technical conditions, on licensing of commercial activity on construction of objects which under the class of consequences *(responsibility) belong to objects with the medium (CC2) and significant (CC3)* consequences, on professional certification of the performers of certain types of works, on the expert organizations that carry out expertise of design documentation for construction of objects, on the objects of construction and objects completed by construction *(construction passports for land plot development, design approved documentation for construction of objects which belong to CC2 and CC3 objects, results of environmental impact assessment, etc.),* on state architectural and construction supervision, etc., as well as amendments to the specified information.

The Law allows submitting documents in electronic form for receiving administrative and other services in the field of construction, as well as to receive such services in electronic form, to pay for administrative services in the field of construction and fines for violations in the field of urban planning activity with the use of electronic system.

Identifier of the construction object *(object completed by construction)* is being introduced, as well as the single procedure for assigning and changing addresses of real estate objects.

In the Law of Ukraine "On the Regulation of Urban Planning Activity" the list of grounds for termination by SACI of the right to commence performance of preparatory works and the right to commence performance of construction works acquired on the basis of submitted notification is changed. It is supplemented that such rights may be terminated on the basis of a court decision which has come into force.

The list of grounds for cancellation of the permit for performing construction works has been changed. The construction permit may be cancelled in case:

1) submission by a customer of an application for cancellation of the construction permit;
2) availability of information on liquidation of the legal entity that is the customer;
3) on the basis of a court decision that has come into force, on cancellation of urban planning conditions and restrictions and/or termination of the right to perform construction works.

The Law of Ukraine "On Architectural Activity" is supplemented by the right of a customer to assign the obligation to perform technical supervision to a specialized organization or specialist in technical supervision or to a consulting engineer, specifying in the contract agreement of their powers. Exemplary forms of agreements on carrying out technical supervision and on the provision of engineering and consultancy services in construction are approved by the Ministry for Communities and Territories Development of Ukraine.

The Code of Ukraine on Administrative Offenses was supplemented by an article establishing responsibility for violations of the legislation in the field of providing administrative services.

From 1 December 2020, amendments to the Law "On Environmental Impact Assessment" will come into force, in particular:

- Notification on planned activity subject to environmental impact assessment, report on environmental impact assessment and announcement on the beginning of a public discussion of environmental impact assessment report may be submitted among other means, including with the use of electronic cabinet of the Unified Register on Environmental Impact Assessment, another electronic cabinet or information system, the users of which are the authorized territorial body and a business entity.
- Notification on planned activity subject to environmental impact assessment, report on environmental impact assessment and announcement on the beginning of a public discussion of the environmental impact assessment report regarding objects that under class of consequences *(responsibility)* belong to objects with medium *(CC2)* and significant *(CC3)* consequences shall be sent exclusively in electronic form through the electronic cabinet of the user of the Unified State Electronic System in the Field of Construction or another state information system integrated with this electronic cabinet, users of which are the business entity and authorized territorial body.

Further exchange of information and documents takes place in the manner, according to which the notification on the planned activity subject to environmental impact assessment has been submitted.

The environmental impact assessment opinion shall be transmitted from the Unified Register on Environmental Impact Assessment to the Unified state electronic system in the field of construction by information and telecommunication means in electronic form in the order determined by the CMU in the Procedure for Organizing Electronic Information Interaction of State Electronic Information Resources.

The Law of Ukraine "On Basic Principles *(Strategy)* of the State Environmental Policy of Ukraine for the Period Until 2030" No. 2697-VIII dated 28 February 2019

The necessity to take systematic measures to improve energy efficiency, decarbonize energy sector and develop renewable energy sources has been established. The expected results include the creation of conditions for decarbonization of the energy sector,

active introduction of energy-saving technologies and improvement of energy efficiency, increase of energy production through renewable sources, introduction of the best available low-carbon, resource-saving production technologies, which will enable to reduce significantly an amount of greenhouse gas emissions and pollutions into the atmospheric air, as well as the discharge of pollutants into water bodies.

The Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine on Encouragement of Investment Activity in Ukraine" No. 132-IX dated 20 September 2019

To the Civil Code of Ukraine has been introduced a definition of right of trust ownership as a way of securing fulfillment of obligations, which is a type of ownership of property under which the creditor who received property into the trust ownership *(trustee)* has no right to dispose such property independently, except for foreclosure on it, as well as repurchase of it for public needs in the order prescribed by law. From the moment of establishing the trust ownership, the ownership right of the person who has transferred his property into the trust ownership shall be terminated. The law establishes grounds for the occurrence, objects of trust ownership *(property that may be alienated and subject to foreclosure, except securities and corporate rights),* foreclosure on the trust ownership object, etc.

The Land Code of Ukraine is supplemented by an article on the features of acquiring and enforcement of the right of trust ownership on land plots.

The necessity of expert monetary valuation of the land plots of private ownership which are transferred into pledge, as well as to reflect the value of land plots, land use right in accounting were abolished in the Law of Ukraine "On Land Valuation".

The list of means to appeal decisions, actions or omissions of the State Cadastral Registrar was expanded in the Law of Ukraine "On the State Land Cadastre". Decisions, actions or omissions of the State Cadastral Registrar may be appealed not only to a court, but also to the territorial body of the StateGeoCadastre, which implements the state policy in the field of land relations in the territory of powers of the respective State Cadastral Registrar, and to the StateGeoCadastre itself.

The Law of Ukraine "On Amendments to the Law of Ukraine "On Construction Standards" on Improvement of Standardization in Construction" No. 156-IX dated 3 October 2019

On 3 October 2019, the Verkhovna Rada of Ukraine adopted the Law of Ukraine "On Amendments to the Law of Ukraine "On Construction Standards" on Improvement of Standardization in Construction". Amendments became effective on 19 October 2019.

It provides that the objects of standardization in construction are:

1) planning and development of the territory;
2) the object of construction, urban planning and architecture and its constituent parts;
3) composition and content of documentation of objects of the construction, urban planning and architecture.

Parametric, regulatory and target methods of standardization in construction are introduced. It is noted that the choosing method of standardization in construction is carried out on the basis of features of the object of standardization in construction. Preference is given to parametric and target methods of standardization in construction.

In addition, the texts of state construction standards are included in the central construction standards fund, and sectoral construction standards, which are included in funds of sectoral construction standards, shall be published on the official websites of the relevant standardization entities in construction. Access to such texts is free of charge.

Resolution of the CMU No. 128 dated 23 January 2019

Resolution has amended the Procedure for Approval of Projects of Construction and Conducting Their Expertise, approved by Resolution of the CMU No. 560 dated 11 May 2011 *(hereinafter in this subparagraph – the Procedure).* In particular, the Procedure has been supplemented by a provision, according to which for objects subject to environmental impact assessment, a report on environmental impact assessment shall be developed. In the presence of an environmental impact assessment report, materials *(chapter)* of environmental impacts assessments within the design documentation shall not be developed.

Resolutions of CMU No. 128 dated 23 January 2019 and No. 367 dated 27 March 2019

Resolutions amended the Procedure for Performing Preparatory and Construction Works approved by the CMU Resolution No. 466 dated 13 April 2011. It is established that construction works concerning objects subject to environmental impact assessment in accordance with the Law of Ukraine "On Environmental Impact Assessment" may be performed by a customer upon receipt of a document certifying the ownership or use right to the land plots, or a superficies agreement and issuance to the customer of construction permit.

The list of information placed on a stand which is installed at the construction site in a viewable place is supplemented by information on carrying out environmental impact assessment for objects subject to environmental impact assessment in accordance with the Law of Ukraine "On Environmental Impact Assessment".

Results of the environmental impact assessment shall be added to the application on obtaining construction permit in the cases determined by the Law of Ukraine "On Environmental Impact Assessment". Results of environmental impact assessment in cases determined by the Law of Ukraine "On Environmental Impact Assessment" may be the ground for refusal in issuing permit.

The term "electronic system of the implementation of declarative and permitting procedures in construction" is replaced by the term "electronic cabinet of a customer".

The list of information and documents that may be provided through the customer's electronic cabinet has been expanded, in particular decision to refuse in issuing a construction permit.

The decision to refuse in issuing the permit shall be published on the official website of the relevant body of state architectural and construction control within one business day after its adoption.

The permit may be cancelled by the relevant body of state architectural and construction control based on grounds determined by the law, through issuing a relevant regulatory act. SACI shall, no later than the next business day from the day of notification by the state architectural and construction control body about cancellation of the permit, make an appropriate entry in the register.

The relevant body of state architectural and construction control shall notify the customer in writing about cancellation of the permit within three business days after the cancellation.

Orders of the Ministry of Regional Development, Building and Housing and Communal Services of Ukraine No. 112 dated 17 May 2019 and the Ministry for Communities and Territories Development of Ukraine No. 314 dated 17 December 2019

The Orders made amendments to the Procedure for Development of the Design Documentation for Construction of Objects, approved by the Order of the Ministry of Regional Development, Building and Housing and Communal Services of Ukraine No. 45 dated 16 May 2011 *(hereinafter in this subparagraph – the Procedure)*.

The Procedure is supplemented by the requirements according to which the design decisions stipulated by the design documentation, at the stage to be approved, must comply with the design decisions which have been approved at previous stages of the design Sketch Project, Feasibility Study, Technical and Economic Calculation. The design documentation for the object of construction must be developed taking into account the building codes and standards valid at the date of transmission of it to the customer.

The Procedure is supplemented by a provision according to which the design documentation for the construction of object, developed in electronic form, shall be signed by a qualified electronic signature of a contractor.

Resolutions of CMU No. 236 dated 20 March 2019 and No. 890 dated 28 October 2019 revised the List of Construction Works That do not Require Documents Giving Right for Their Performance, and After Completion of Which the Object is not Subject to Acceptance Into Operation, approved by Resolution of the CMU

No. 406 dated 7 June 2017 *(hereinafter in this subparagraph – the List)*

Among other things, the List is supplemented by:

- works on re-equipment and redevelopment of residential and non-residential house, premise, building, facility without interference with fencing and load-bearing structures and/or engineering systems of general use – for objects with medium *(CC2)* and significant *(CC3)* consequences.
- reconstruction or technical re-equipment of power grids with a voltage not exceeding 10 kV *(lines of power grids, transformer substations, objects of engineering and transport infrastructure).*

The performance of construction works for new construction, reconstruction, restoration, major repair and technical re-equipment should be carried out in compliance with the requirements of legislation, building codes, standards and rules and in accordance with the design documentation developed and approved in the established by the legislation order.

Resolution of the CMU No. 128 dated 23 January 2019

The Resolution amended the Procedure of Public Involvement to Discuss Issues Concerning Decision-Making That May Affect the Environment approved by Resolution of the CMU No. 771 dated 29 June 2011 *(hereinafter in this subparagraph – the Procedure).*

It is established that operation of the Procedure does not extend to decisions relating to national defense or actions in case of emergencies.

The list of decisions subject to the Procedure has been revised, now it is the decisions of the central and local executive bodies, which are divided into: regulatory acts; state planning documents to which the Law of Ukraine "On Strategic Environmental Assessment" applies; state planning documents not covered by the Law of Ukraine "On Strategic Environmental Assessment"; plans for nature conservation and resource-saving measures financed at the expense of financial resources of the environmental protection funds.

It is clarified that public discussion in the process of strategic environmental assessment is carried out in accordance with the procedure stipulated by the Law of Ukraine "On Strategic Environmental Assessment". Public hearings in the process of strategic environmental assessment *(except for public hearings on drafts urban planning documentation at the local level)* shall be conducted in accordance with this Procedure.

The list of data, which are informing to the public by an organizer before conducting a public discussion, the procedure for determining the place and time of conducting public hearings and the publication of this information, was clarified.

It is established the duty of the organizer of public discussion to provide audio and/or video fixing of public hearings, preparation of the minutes of public hearings.

From the Procedure has been removed the chapter on the features of public discussion of the decision on the environmental impact assessment of types of activities and objects posing an increased environmental hazard.

Amendments to State Construction Standards *(SCS)*

- New SCS concerning planning and development of territories B.2.2-12:2019 have been approved.

The Order of the Ministry of Regional Development, Building and Housing and Communal Services of Ukraine No. 104 dated 26 April 2019 approved SCS B.2.2-12:2019 "Planning and Development of Territories" *(hereinafter in this paragraph – the "SCS B.2.2-12:2019").* New SCS B.2.2-12:2019 came into effect on 1 October 2019.

It is stipulated that SCS B.2.2-12:2019 apply to the planning and development of territories of human settlements and inter-settlements territories at the state, regional and local level and shall be applied in accordance with the Law of Ukraine "On Construction Standards".

SCS B.2.2-12:2019 introduces new urban planning terms, in particular:

- "blue lines" – lines of limitation of height and silhouette of development;
- "green lines" – lines defining the areas of all green territories of common use, recreational forests and forest parks, objects of nature reserve funds, landscape protection areas, within which restrictions are set concerning location of objects in accordance with the legislation;
- and other terms.

It is stipulated that the maximum permissible height *(number of floors)* of a residential development shall be determined by the population size and classification of the human settlement, taking into account the established restrictions on the protection of cultural heritage.

According to SCS B.2.2-12:2019, the energy supply of human settlements should be provided from the district energy system networks with the involvement of alternative sources of electricity, solar, geothermal, wind installations, etc. in accordance with the DSTU 8635:2016.

- Amendments to SCS B.2.5-56:2014 on fire protection systems have been made.

2.2. MAIN REGULATORY ACTS EXPECTED TO BE APPROVED IN 2020

1. RESTRUCTURING OF FEED-IN TARIFF

The problem of the budget deficit of the SE Guaranteed Buyer to pay for electricity under feed-in tariff started to be actively discussed in September 2019. As of the end of 2019, three Draft Laws on restructuring feed-in tariff were discussed, two of which – submitted by People's Deputies *(L. Buimister and L. Vasylenko; S. Nahorniak)* and registered in the Verkhovna Rada of Ukraine *(No. 2543 and No. 2543-1 respectively)*. The Draft Law of the Ministry of Energy and Environmental Protection was not received in official sources and only on 28 November 2019 at the X International Renewable Energy Investment Forum was presented the concept of the Ministry of Energy and Environmental Protection on restructuring of feed-in tariff.

The concept of the Ministry of Energy and Environmental Protection has not been supported by renewable energy investors, especially under the projects with concluded pre-PPA. A significant reduction in time frames of the projects implementation exclude the opportunity of implementation of projects within the time frames required to obtain feed-in tariff.

On 6 December 2019, the People's Deputies L. Buimister and L. Vasylenko submitted to the Verkhovna Rada of Ukraine and registered the Draft Law of Ukraine "On Amendments to Some Laws of Ukraine on Improving the Investment Climate in the Field of Renewable Energy" No. 2543.

On 13 December 2019, Verkhovna Rada Committee on Energy, Housing and Utility Services recommended to reject the Draft Law No. 2543.

On 24 December 2019, the People's Deputy S. Nahorniak submitted an alternative Draft Law of Ukraine "On Amendments to Some Laws of Ukraine on the Production of Electricity from Alternative Energy Sources", registered under No. 2543-1. In many ways, this Draft Law is similar to the Draft Law No. 2543.

Thus, in 2020 it is expected to adopt regulatory act to resolve situation related with the budget deficit of the SE Guaranteed Buyer and possible restructuring of feed-in tariff.

2. CONDUCTING AUCTIONS FOR RES

On 25 April 2019, was adopted the Law of Ukraine "On Amendments to Some Laws of Ukraine on Ensuring Competitive Conditions for the Production of Electricity from Alternative Energy Sources" No. 2712-VIII *(hereinafter in this subparagraph – the "Law about auctions")*. According to it, the CMU shall:

- within three months from the date of entry into force of the law *(22 May 2019)* ensure the development and approval of the procedure of conducting auctions for allocation of support quota;
- by 1 December 2019, approve annual quotas for auctions for RES;
- no later than 31 December 2019 ensure conducting of pilot auction.

The procedure of conducting auctions for allocation of support quota was approved by the CMU only on 27 December 2019. However, annual quotas for the 5 years have not been approved. Pilot auction has not been conducted as well. Therefore, one of the priorities of the CMU for 2020 should be the implementation of the Law about auctions, namely the approval of quotas and conducting auctions.

According to the Law about auctions, annual quotas for auctions are approved by the CMU under the submission of the Ministry of Energy and Environmental Protection. Quotas are approved annually, but no later than 1 December for the next 5 years.

It should be noted that proposals on the size of support quotas are prepared by the State Agency on Energy Efficiency and Energy Saving of Ukraine and TSO, taking into account, in particular, the report on conformity assessment *(sufficiency)* of generating capacities.

The TSO each year prepares and publishes the report on conformity assessment *(sufficiency)* of generating capacities. The report shall be approved by the NEURC, but for 2018 the report has not yet been approved by the NEURC. The report on conformity assessment *(sufficiency)* of generating capacities for 2019 was sent for approval to the NEURC only on 13 December 2019 and has not yet been approved.

Table 2.2.1. *Comparative table of proposals on feed-in tariff restructuring*

Issue	Draft Law, Registration No. 2543-1 dated 24 December 2019	Draft Law, Registration No. 2543 dated 6 December 2019	Draft Law Concept presented by the Ministry of Energy and Environmental Protection of Ukraine on 28 November 2019
Categories of RES electricity producers, for which the term of feed-in tariff, rate of feed-in tariff do not change	RES electricity producers that: • Operate WPPs commissioned by 1 January 2020 • Have WPPs to be commissioned after 1 January 2020 and not obliged to participate in auction • Concluded pre-PPA by 31 December 2019, subject to commissioning of the WPPs by 31 December 2020	RES electricity producers that: • Operate WPPs commissioned by 1 January 2020 • From 1 January 2020 commission the WPPsthat are not obliged to participate in auction • Concluded pre-PPA by 31 December 2019, subject to commissioning of the WPPs by 31 December 2020	RES electricity producers that: • Operate WPPs commissioned by 1 January 2020 • From 1 January 2020 commission the WPPs that are not obliged to participate in auction • Concluded pre-PPA by 31 December 2019, subject to commissioning of the WPPs by 31 December 2020
Categories of RES electricity producers for which feed-in tariff is extended with simultaneous reduction of feed-in tariff rate *(subject to restructuring of PPAs under feed-in tariff)*	• Operate WPPs commissioned from 1 January 2017 to 1 January 2020 that concluded additional agreements on restructuring • Concluded pre-PPA by 31 December 2019 and concluded additional agreements on restructuring, subject to commissioning of the WPPs by 31 December 2020	• Operate WPPs commissioned from 1 January 2017 to 1 January 2020 that concluded additional agreements on restructuring • Concluded pre-PPA by 31 December 2019 and concluded additional agreements on restructuring, subject to commissioning of the WPPs by 30 June 2022	• Operate WPPs commissioned from 1 January 2017 to 1 January 2020 that concluded agreement on restructuring • Concluded pre-PPA by 31 December 2019 and concluded agreement on restructuring, subject to commissioning of the WPPs by 31 December 2020
Term for feed-in tariff extension *(subject to restructuring of PPAs under feed-in tariff)*	By 31 December 2032 *(for operating WPPs and WPPs under construction)*	15 years from the date of commissioning of the WPPs *(for operating WPPs and WPPs under construction)*	For operating *WPPs* – by 1 January 2035. For *WPPs* to be built – 15 years from the date of setting feed-in tariff by the Regulator
Level of feed-in tariff reduction *(subject to restructuring of PPAs under feed-in tariff)*	Feed-in tariff coefficient *(according to the table in Article 9[1] of the Law of Ukraine "On Alternative Energy Sources")* is reduced: • For operating WPPs – by 5% • For WPPs to be commissioned in 2020-2022 – by 7.5% • For WPPs to be commissioned in the period from 1 July 2022 to 31 December 2022 – by 7.5% additionally	Feed-in tariff coefficient *(according to the table in Article 9[1] of the Law of Ukraine "On Alternative Energy Sources")* is reduced: • For operating WPPs – by 5% • For WPPs to be commissioned in 2020-2022 – by 7.5%	Feed-in tariff coefficient *(according to the table in Article 9[1] of the Law of Ukraine "On Alternative Energy Sources")* is reduced: • For operating WPPs – by 10% • For WPPs to be commissioned in 2020 – by 10%
Condition for restructuring of PPAs under feed-in tariff	Consent of electricity producer or developer of construction project to restructure the agreement	Consent of electricity producer or developer of construction project to restructure the agreement	Consent of electricity producer or developer of construction project to restructure the agreement
Ground for restructuring of agreement	Additional agreement on restructuring of PPA under feed-in tariff	Additional agreement on restructuring of PPA under feed-in tariff	PPA under feed-in tariff with extended term. Previously concluded PPA under feed-in tariff shall be terminated

Issue	Draft Law, Registration No. 2543-1 dated 24 December 2019	Draft Law, Registration No. 2543 dated 6 December 2019	Draft Law Concept presented by the Ministry of Energy and Environmental Protection of Ukraine on 28 November 2019
Form and content of agreement	Form of additional agreement is standard. It shall be approved by the Regulator. Additional agreement shall stipulate the following: • feed-in tariff rate in UAH and EUR • term of agreement and term of feed-in tariff application • deadline for construction and commissioning of the facility • conditions/grounds of amendments and termination of agreement • guarantees concerning application of the laws of Ukraine effective on the date of conclusion of the initial PPA under feed-in tariff • conditions of additional agreement apply to relations that arose from 1 January 2020	Form of additional agreement is standard. It shall be approved by the Regulator. Additional agreement shall stipulate the following: • feed-in tariff rate in UAH and EUR • term of agreement and term of feed-in tariff application • deadline for construction and commissioning of the facility • conditions/grounds of amendments and termination of agreement • guarantees concerning application of the laws of Ukraine effective on the date of conclusion of the initial PPA under feed-in tariff • conditions of additional agreement apply to relations that arose from 1 January 2020	Form of agreement is standard. It shall be approved by the Regulator. Agreement shall stipulate the following: • feed-in tariff rate in UAH and EUR • term of agreement • early termination of previously concluded agreement by mutual agreement of the parties
Deadline for agreement restructuring	1 April 2020	1 April 2020	1 April 2020
Agreement restructuring procedure	• Application shall be submitted to the Regulator by 1 March 2020 • Regulator forms Register of entities which agreed to restructuring and submit it to the Guaranteed Buyer – 5 business days • Guaranteed Buyer shall send drafts of additional agreements for signing – 5 business days • Business entities shall sign and send additional agreements back – 5 business days • Regulator shall approve feed-in tariff by 1 April 2020 • By 1 April 2020 Regulator shall publish the list of entities that signed additional agreements	• Application shall be submitted to the Regulator – by 1 March 2020 • Regulator forms Register of entities which agreed to restructuring and submit it to the Guaranteed Buyer – 5 business days • Guaranteed Buyer shall send drafts of additional agreements for signing – 5 business days • Business entities shall sign and send additional agreements back – 5 business days • By 1 April 2020 Regulator shall publish the list of entities that signed additional agreements	Guaranteed Buyer shall conclude agreement within 14 days from the date of receipt of the application from the electricity producer / project developer

Issue	Draft Law, Registration No. 2543-1 dated 24 December 2019	Draft Law, Registration No. 2543 dated 6 December 2019	Draft Law Concept presented by the Ministry of Energy and Environmental Protection of Ukraine on 28 November 2019
Stabilization clause	Article 9^1 of the Law of Ukraine "On Alternative Energy Sources". Articles 7 and 8 of the Law of Ukraine "On Foreign Investment Regime". The laws effective on the date of conclusion of the PPA under feed-in tariff shall be applied to electricity producers and project developers who agreed to voluntary restructuring	Article 9^1 of the Law of Ukraine "On Alternative Energy Sources". Articles 7 and 8 of the Law of Ukraine "On Foreign Investment Regime". The laws effective on the date of conclusion of the PPA under feed-in tariff shall be applied to electricity producers and project developers who agreed to voluntary restructuring	Article 9^1 of the Law of Ukraine "On Alternative Energy Sources". The laws effective on the date of implementation of restructuring shall be applied to electricity producers and project developers who agreed to voluntary restructuring
Responsibility for imbalances	For RES electricity producers who **did not agree** to voluntary restructuring: • by 31 December 2020 – 0% • from 1 January 2021 – 100% For RES electricity producers who agreed to agreements restructuring: by 31 December 2020 – 0% • from 1 January 2021 – 20% • from 1 January 2022 – 40% • from 1 January 2023 – 60% • from 1 January 2024 – 80% • from 1 January 2025 – 100% RES electricity producers who agree to voluntary restructuring shall pay for electricity imbalances in case of deviation of hourly schedules of electricity output of such producers: • WPPs – more than by 15%* Total level of liability for imbalances of RES electricity producer who agreed to voluntary restructuring shall not exceed 5% of cost of actually delivered electricity under feed-in tariff in respective billing period	For RES electricity producers who **did not agree** to voluntary restructuring: according to the current scheme stipulated by the legislation – from 1 January 2021 to 1 January 2030 – by 10% annually. For RES electricity producers who agreed to voluntary restructuring: by 31 December 2020 – 0% • from 1 January 2021 – 20% • from 1 January 2022 – 40% • from 1 January 2023 – 60% • from 1 January 2024 – 80% • from 1 January 2025 – 100% Electricity forecasting tolerance margin for WPPs – 15%	For RES electricity producers who did not agree to voluntary restructuring: • by 31 December 2020 – 0% • from 1 January 2021 – 35% • from 1 January 2022 – 70% • from 1 January 2023 – 100% For RES electricity producers who agreed to voluntary restructuring: by 31 December 2020 – 0 % • from 1 January 2021 – 20% • from 1 January 2022 – 40% • from 1 January 2023 – 60% • from 1 January 2024 – 80% • from 1 January 2025 – 100%
Annual quota for RES auctions	Amendments to Article 9^3 of the Law of Ukraine "On Alternative Energy Sources": annual quota at auctions may be allocated by RES: • wind – not less than 30% • solar – not less than 30% • other types of RES – not less than 15%**		

** According to the current legislation, starting from the year following the year in which the share of RES in annual energy balance will reach 5%, the payment of electricity imbalances will be carried out in case of deviation of hourly schedules of output of producers of electricity from wind energy for more than by 10%*

*** According to the current version of the Law, quota is allocated in the following way:*
- *for WPPs – not less than 15%*
- *for SPPs – not less than 15%*
- *for other types – not less than 15%*

Given that proposals on quotas for auctions are prepared taking into account the report on conformity assessment *(sufficiency)* of generating capacities, delays in approving the report may also affect the approval of annual quotas.

The RE sector expects to have auction quotas approved as well as the first auction conducted still in 2020.

3. INTRODUCTION AND OPERATION OF ENERGY STORAGE SYSTEMS

The development of renewable energy in Ukraine in recent years increases the need for energy storage systems. The majority of renewable energy facilities constitute wind and solar power plants. These facilities have not continuous electricity production in connection with weather changes. Therefore, the partial solution to the problem of unstable renewable energy production may be the use of energy storage systems. According to the TSO, from 2021 to 2023, Ukraine will need to commission 1,500 MW of energy storage systems.

At the end of 2019, two Draft Laws on energy storage systems were registered:

- Draft Law No. 2496 dated 26 November 2019 on Ensuring Energy Security and Flexibility of the Power System, Real Competition, Decarbonization of the Economy, Reduction of Prices of Electricity Consumption *(concerning energy storage systems) (hereinafter in this paragraph – the "Draft Law No. 2496");*
- Draft Law No. 2582 dated 12 December 2019 on Amendments to the Law of Ukraine "On the Electricity Market" *(concerning energy security, balancing of the energy system and energy storage system) (hereinafter in this paragraph – the "Draft Law No. 2582").*
- Both Draft Laws are completely different, although they are aimed at regulating energy storage systems. None of the Draft Laws have yet been approved by the Verkhovna Rada Committee on Energy, Housing and Utility Services. However, the working group of the Verkhovna Rada Committee on Energy, Housing and Utility Services on the introduction of energy storage systems has considered the Draft Law No. 2582.

Amendments to Art. 71 of the Law "On the Electricity Market" under the Draft Law No. 2582 stipulates the opportunity to use electricity storage systems by renewable energy producers within the framework of the balancing group of the SE Guaranteed Buyer. These amendments may allow reducing liability for producers' imbalances that will use storage systems.

The Draft Law No. 2582 contains definitions of the energy storage system and the storage system operator as a participant of the electricity market.

It should be noted that it is proposed by the Draft Law No. 2582 to supplement the conditions of conducting competitive procedure for the construction of generating capacities in Art. 29 of the Law "On the Electricity Market" by the construction of energy storage systems. This will allow application of incentives for the construction of storage systems, such as: establishing a fee for the service, allocation of land plots, using public-private partnership mechanisms, as well as providing state aid.

Besides, the Draft Law No. 2582 contains conditions that determine the status of energy storage systems operators and the conditions for licensing that activity.

Despite the importance of adopting a law to regulate energy storage systems, Draft Laws No. 2496 and No. 2582, registered in the Verkhovna Rada, still need to be discussed and finalized. It is also important to take into account the principles of energy storage systems usage in EU countries. In particular, the operation of energy storage systems by the TSO and the DSO in EU countries is allowed only for their own needs.

Therefore, the TSO and the DSO cannot be storage systems operators on the electricity market. However, the Draft Law No. 2582 provides for the opportunity for the TSO to operate energy storage systems with a capacity of up to 250 MW in cases when other offers on the market are absent. Such conditions of the Draft Law No. 2582 reflect an absence of competition on the market and contradict the principles of electricity market functioning.

The adoption of a law on encouraging energy storage systems in 2020 will be the most expected for many participants of the electricity market.

4. CANCELLATION OF VAT BENEFITS

By the Draft No. 1210 of the Law of Ukraine "On Amendments to the Tax Code of Ukraine on Improvement of Tax Administration, Removal of Technical and Logical Inconsistencies in the Tax Legislation", registered at the Verkhovna Rada of Ukraine on 30 August 2019, was proposed to exclude energy equipment for solar and wind power plants from the list of goods, operations on importation into the customs territory of Ukraine and on supply in the customs territory of Ukraine of which are exempt from value added tax. On 16 January 2020, the said law was adopted in the second reading and in its entirety.

5. CHANGE OF THE NEURC STATUS

Despite the fact that only on 29 December 2019 the Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine on Ensuring Constitutional Principles in the Fields of Energy and Utilities" No. 394-IX dated 19 December 2019 *(hereinafter in this subparagraph – the "Law No. 394-IX")* came into force, by which the NEURC is subordinated to the CMU, is currently discussing the possibility of applying to the Constitutional Court of Ukraine for recognition of the provisions of the Law No. 394-IX, as well as the possibility of introducing new amendments to the Constitution of Ukraine and other legislation in order to grant the NEURC with the status of an independent regulator in field of energy and utilities. Currently, draft laws on this regulation are absent.

Law No. 394-IX appears to be forced and temporary measure aimed at preventing the termination of functioning of the NEURC from 1 January 2020, therefore it seems logical and expected the appearance in 2020 of relevant proposals on establishing the status of the NEURC as an independent Regulator in the fields of energy and utilities.

6. LICENSING OF ACTIVITIES IN THE FIELDS OF ENERGY AND UTILITIES

Draft Resolution of the NEURC "On Approval of the Procedure for Licensing Types of Commercial Activities, State Regulation of which is Performed by the NEURC"

In connection with the adoption of the Law of Ukraine "On Amendments to Some Legislative Acts of Ukraine on Ensuring Constitutional Principles in the Fields of Energy and Utilities", which became effective on 29 December 2019, amendments were made, in particular, to the Law of Ukraine "On Licensing Types of Commercial Activities" and the Law of Ukraine "On the National Energy and Utility Regulatory Commission".

In order to fulfil provisions of the laws, the NEURC developed the Draft Resolution "On Approval of the Procedure for Licensing Types of Commercial Activities, State Regulation of Which is Performed by the NEURC" *(hereinafter in this subparagraph – the "Procedure for Licensing"),* which defines the procedure for issuance, re-issuance, suspension, cancellation of licenses and other issues related to the licensing of types of commercial activities, state regulation of which is carried out by the NEURC.

A detailed list of types of commercial activities operated or intended to be operated by business entities on the electricity market, natural gas market, oil and oil products and in the field of utilities, to which the Procedure for Licensing will apply.

The license application shall be added by:

1) documents in accordance with the license conditions;
2) a copy of passport of the head of the license applicant *(or his authorized representative)* with a mark of the supervisory authority on the notification of refusal due to their religious beliefs from acceptance of registration number of the taxpayer's record card *(to be submitted only by individual entrepreneurs, who due to their religious beliefs, refuse to accept the registration number of the taxpayer's record card and reported about that the appropriate supervisory authority);*
3) a description of the documents submitted for obtaining license in two copies *(in case of submitting documents in paper form).*

Within 10 business days from the day of receipt of the application for obtaining license, the NEURC shall determine the existence or absence of grounds for leaving it without consideration. The grounds for leaving the application for obtaining license without consideration shall be determined.

The grounds for taking decision on refusal in issuing license by results of the consideration of the application and supporting documents for obtaining a license are:

1) determining non-compliance of license applicant with the license conditions;
2) identifying of unreliable data in the supporting documents submitted by the license applicant;
3) availability of information in the NEURC about the court decision regarding the license applicant that prohibits him to carry out the type of commercial activity, for right to carry out of which he has submitted the application, and has come into force in accordance with Article 255 of the Code of Administrative Proceedings.

One-time payment in the amount of one subsistence minimum shall be charged for the issuance of a license, based on the amount of subsistence minimum for employable persons, effective on the day

the NEURC adopts a decision on issuance of license, if another amount of payment is not established by law. The subsistence minimum for employable persons as of 1 January 2020 is UAH 2102.

The fee for issuance of license shall be paid by the licensee within 10 business days from the date of entry of the record concerning decision to issue license to the license register *(publication of the decision on issuance of the license on the official website of the NEURC).*

The term for taking decision to issue a license or to refuse to issue it is:

- 10 business days from the day of receipt of application for obtaining a license for the right to carry out commercial activities related to adjacent markets;
- 20 business days from the day of receipt of application for obtaining a license for the right to carry out commercial activities related to the field of activities of entities of natural monopolies.

It is stipulated that the license shall be issued for an unlimited period.

The licensee is obliged to notify the licensing authority about any changes to the data specified in the application, documents and information that have been added to the application for obtaining license within the period set by the license conditions, but not more than 1 month from the day following the day of their occurrence. In case of violation by the licensee of the period to notify the NEURC about such changes, the licensee shall also be held administratively liable.

The Procedure for Licensing will also regulate the issues of re-issuance, suspension and renewal of the license, as well as cancellation of the license.

III UWEA ACTIVITIES

3.1. HIGHLIGHTS OF THE YEAR

The year 2019 was rich in events that took place in all areas of the UWEA activities – from participation in the legislative process to international and national wind energy events. The Law on "green" auctions adopted in 2019 laid a solid foundation to significant changes in the Ukrainian renewable energy sector. Following the adoption of the Law of Ukraine on the Electricity Market, in July 2019 Ukraine transitioned to a new electricity wholesale market, replacing the previous single buyer model.

Highlights of the year include:

- **In April 2019,** at the WindEurope Annual Event 2019, a poster presentation "Construction of Onshore Wind Farms in Ukraine in the Period of Replacement of the Feed-in Tariff by Auctions" prepared by Maryna Hritsyshyna, Counsel at Sayenko Kharenko, Member of the UWEA Board was selected for a poster award in the category "Finance".
- **In November 2019,** at the 18th World Wind Energy Conference WWEC 2019 the World Wind Energy Award 2019 was given to Andriy Konechenkov, Chairman of the UWEA Board, and Galyna Shmidt, Member of the UWEA Board, for outstanding achievements in the dissemination of wind energy utilization in Ukraine and worldwide.
- **In December 2019,** at the second Green Forum "ECO-Transformation – 2019", Carl Sturen, Founder and General Director of Vindkraft Ukraine, was awarded with Eco–Oscar for his considerable contribution to the successful "green" transformation of Ukraine, promotion of environmentally friendly production and support of eco-specialists.
- **In December 2019,** Choice of Ukraine – 2019 was awarded to the UWEA co-founder Ukrainian Wind Energy Agency LLC.

2019 was another year of constructive cooperation of all UWEA members aimed at successful implementating wind-energy technologies in the country, strengthening energy independence and security of Ukraine. UWEA Secretariat expresses its sincere gratitude to all its members for their support, fruitful work and professionalism.

THE FIRST WORLD RENEW DAY

Initiated by the Global 100%RE and Ambassador for Global 100%RE Ruslana *(Ruslana Lyzhychko)* in partnership with the World Wind Energy Association and FridaysForFuture the first World REnew Day, which highlighted the need to switch to renewable energy, took place on the occasion of the June solstice. A large number of organisations from civil society, the renewable energy community, local governments and the scientific sector supported the initiative. Ukraine Wind Energy Association played an active role in organizing and conducting World REnewDAY.

Andriy Konechenkov, Chairman of the UWEA, Vice President of the WWEA: *"Green energy is a way to peace; it saves people's lives. In its new report, BloombergNEF published a forecast of renewable energy development until 2050. 50% of the world's energy will be renewable! I am confident that we will not only achieve this goal, but also surpass it. Our common goal is 100% Renewables!"*

http://uwea.com.ua/en/news/entry/vsemirnyj-den-vozobnovlyaemoj-energii-world-renewday/

GLOBAL 100%RE UKRAINE PLATFORM

On January 31, 2019 a press conference on the establishment for Global 100%RE UKRAINE was held in Kiev. The event was initiated by the RE industry associations of Ukraine, while the idea was inspired by Ruslana *(Ruslana Lyzhychko),* Ambassador for Global 100%RE.

The conference started with a teleconference with the Global 100%RE platform headquarters in Bonn, Germany. Member of the Global 100%RE Executive Committee, Secretary General of the World Wind Energy Association Stefan Gsänger in his address expressed support to Ukraine and all organizations that had joined the energy transition to renewable energy sources.

"As the Ambassador for Global RE100%, pursuing the interests of multilateral cooperation, without which it is impossible to successfully develop renewable energy in Ukraine and integrate Ukraine into the global process of transition to 100% renewable energy, I initiate a multilateral dialogue. Such synergy is not only relevant, it is a necessary condition for achieving a common goal – the Ukraine's transition to 100% RES", commented Ruslana.

Andriy Konechenkov, Chairman of the UWEA Board and Vice-President of the WWEA: *"Only together, on the common Global 100%RE Ukraine platform, that "green" energy sources will be able to replace modern conventional energy sources, which now have a major impact on global warming process".*

The founders of the Global 100%RE Ukraine include: Office of the Ambassador for Global 100%RE, Ukrainian Wind Energy Association, Bioenergy Association of Ukraine, Ukrainian Hydrogen Council, Professional Association of Environmentalists of Ukraine, Solar Energy Associatioin of Ukraine, Ukrainian Association of Energy Service Companies, Bessarabia Development Centre and Institute of Global Transformation.

http://uwea.com.ua/ua/news/entry/global-100-vozobnovlyaemoj-energetiki-dlya-ukrainy/

3.2. PARTICIPATION IN LEGISLATIVE PROCESS

During the year, the UWEA ensured wind energy sector interests on the national ad international levels, actively promoted use of wind energy technologies in the country, opposed initiatives by the Ministry of Energy and Environmental Protection of Ukraine and some Members of the Ukrainian Parliament aimed at retrospective restructuring of feed-in tariffs for "green" electricity. In particular, in the autumn of 2019, appeals and letters were prepared and sent to the President of Ukraine, the Chairman of the Verkhovna Rada of Ukraine, Verkhovna Rada Committee on Energy and Housing and Utilities Services, Ministry of Energy and Environmental Protection of Ukraine regarding the revision of guarantees established at the legislative level for investments in the renewable energy industry and support for a compromise scenario of voluntary restructuring the "green" tariff for RES producers proposed by the bills No. 2543 and No. 2543-1

Numerous meetings were held with representatives of the state bodies and parliamentarians to discuss important issues of industry regulation and search for solutions acceptable to all stakeholders in the national renewable energy sector.

During the year, the UWEA representatives actively worked in various working groups to improve the current regulatory framework in the field of renewable energy.

WORKING GROUP AT THE MINISTRY OF ENERGY AND ENVIRONMENTAL PROTECTION OF UKRAINE

On 15 October 2019, the Ministry of Energy and Environmental Protection of Ukraine held a Meeting chaired by the Minister of Energy and Environmental Protection Oleksiy Orzhel, to discuss the situation in the renewable energy market. An expert working group was set up, comprising the leaders of the leading RES companies, investors and representatives of industry associations, in particular UWEA.

In October-November, three meetings of the Working Group were held to discuss various financial models addressing the funding problem of the SE Guaranteed Buyer and reduce his potential deficit while improving the investment climate in the energy sector of Ukraine.

WORKING GROUP ON ENERGY STORAGE SYSTEMS

On 5 April 2019, Verkhovna Rada Committee on Fuel and Energy Complex, Nuclear Policy and Nuclear Safety with the participation of relevant ministries, departments, associations, international organizations and experts held the first meeting of the Interdepartmental Working Group on the Implementation of energy storage systems, development of a mechanism for stimulating their construction and integration into the

Unified Ukrainian Energy System. 2 working subgroups were set up to focus on the following issues:

- legislative framework and incentives for attracting investment in the sector;
- technical solutions for the installing energy storage systems.

http://uwea.com.ua/en/news/entry/komitetom-vru-po-voprosam-tek-sozdana-rabochaya-gruppa-dlya-vnedreniya-elek/

WORKING GROUP ON MONITORING NATURAL COMPLEXES OF WIND FARM'S TERRITORIES

On 21 May 2019, a meeting to set up a Working group to develop recommendations for the long-term monitoring and assessment of the modern wind farms' impact on natural complexes was organised by the Ukrainian Wind Energy Association in cooperation with Scientific and Education Centre Biodiversity at the Bohdan Khmelnitsky Melitipol State Pedagogical University. The meeting was hosted by Vindkraft Ukraina LLC at their Novotroitska wind farm located in Kherson region of Ukraine.

The event was attended by scientists, representatives of wind power companies operating in the region, the Department of ecology and natural resources of Kherson regional state administration, and environmental organizations. Participants presented and discussed results of the monitoring of natural complexes on the territories of a number of wind farms in Ukraine. It was decided to develop methodological proposals for organizing and conducting monitoring and assessment of the wind farm impacts on natural complexes at the WPP sites, followed by sending them to the Ministry of Ecology and Natural Resources of Ukraine *(currently – Ministry of Energy and Environmental Protection)* for further use and dissemination.

http://uwea.com.ua/en/news/entry/sozdana-rabochaya-gruppa-po-monitoringu-prirodnyh-kompleksov-na-territorii/

WORKING GROUP ON BIODIVERSITY CONSERVATION IN THE CONDITIONS OF WIND ENERGY DEVELOPMENT

In order to preserve wildlife and natural habitats in the Emerald Network territories, forge a common understanding and a vision for the conservation of biodiversity and development of wind energy and avoid the opening of the Bern Convention's cases files, a meeting with the participation of representatives of the Ministry of Energy and Environmental Protection, UWEA secretariat, scientific and environmental NGOs, wind energy companies and EIA consultants was held on October 15, 2019 at the Ministry of Energy and Environmental Protection of Ukraine.

The participants of the meeting outlined a number of problematic issues related to the imperfection of existing environmental legislation and the lack of methodological support for assessing the status and impact on biodiversity at WPP sites. An action plan for the next 3 years to address the identified gaps was adopted. The participants agreed to establish a Working group under the Ministry of Energy and Environmental Protection of Ukraine.

http://uwea.com.ua/en/news/entry/sohranenie-bioraznoobraziya-i-razvitie-vetroenergetiki-v-ukraine/

3.3. INTERNATIONAL CONFERENCES

WINDEUROPE 2019 – DELIVERING A CLEAN ECONOMY FOR ALL EUROPEANS

More than 8,000 industry insiders and 300 exhibitors from 50 countries gathered at the Bilbao Conference and Exhibition in Bilbao to expand their knowledge base, make the contacts they need, and to solidify a vision for the future of this rapidly-expanding sector. WindEurope Conference & Exhibition, the most important event in Europe for the wind industry, took place from 2-4 April 2019 in Bilbao, Spain.

The Conference agenda included 30 conference sessions and 155 speakers including 5 Government Ministers from Spain, Portugal, Poland, Norway and Croatia, leading CEOs and experts from the worlds of technology, policy and finance.

His Majesty King Felipe VI of Spain made an official visit to the 2019 WindEurope in Bilbao and delivered the keynote speech at the official inauguration.

Described by many as the "next frontier" in wind energy, grid integration will form an integral part of the energy transition, and was a major point of focus of the WindEurope 2019 Conference & Exhibition. In terms of grid integration, Europe's agreed renewables target of 32% by 2030 raises significant challenges. Delivering a clean economy for all Europeans means being bold in ambition but also being efficient in new practises. Discussion also focused on ancillary services. Implementing market mechanisms for procuring services is essential if we want wind farms to further contribute to grid stability.

The UWEA delegation included Andriy Konechenkov, Galyna Shmidt and Maryna Hritsyshyna.

http://uwea.com.ua/en/news/entry/windeurope-2019-chistaya-ekonomika-dlya-vseh-evropejcev/

RENEWABLES VS NUCLEAR

On 4 July 2019 a public debate on the roles of renewable energy and nuclear power was organised by the World Wind Energy Association in Recife, Pernambuco, Brazil, in preparation of the 18th World Wind Energy Conference 2019 in Rio de Janeiro. The pre-event initiated debates on the integration of available energy sources into energy systems and their synergies.

Experts from Brazil, Germany, Japan and Ukraine discussed the future energy supply system together with more than 200 participants in light of the climate crisis and strong increase in energy demand. There was broad consensus amongst all speakers and participants that wind and solar energy are today the cheapest energy sources, particular in a country such as Brazil.

International energy experts from Japan and Ukraine reported first hand from the experience with nuclear disasters in Chernobyl and Fukushima and their devastating consequences, with hundreds of thousands of victims. Andriy Konechenkov, Chairman of UWEA Board, Vice-President of the WWEA, highlighted the new prospects for Ukraine opened up by the new government's focus on renewable energy.

http://uwea.com.ua/en/news/entry/vozobnovlyaemaya-energiya-ili-atomnaya/

GO EAST: WIND ENERGY IN UKRAINE

On May 16, 2009, a picturesque town of Zeuthen, not far from Berlin, hosted a workshop "GO East: Wind energy in Ukraine". The event aimed at Ukrainian wind power market was organized by the German company Spreewind GmbH in cooperation with the consulting company GEO-Net GmbH, well known in Ukraine for its wind measurement campaigns conducted at project sites in Ukraine, and the Ukrainian Wind Energy Association.

Speakers incuded the UWEA members: Andriy Konechenkov, Chairman of the UWEA Board, Yaroslav Petrov from Asters, Maryna Hritsyshyna from Sayenko Kharenko, Robert Dunaevskiy from Engineering Company Professor Dr.-Ing. Katzenbach GmbH, Igor Nus from Vestas Northern & Central Europe and Dmytro Goncharenkov from RES Advisor.

http://uwea.com.ua/en/news/entry/go-east-wind-energy-in-ukraine/

EECCA CONFERENCE IN YEREVAN

On June 5, 2019 – World Environmental Day – Yerevan, capital of Armenia, hosted a conference of Climate Action Network non-governmental organizations in Eastern Europe, Caucasus and Central Asia. More than 50 representatives of the regional leading environmental organizations came together to discuss issues related to climate change, development of renewable energy and the future of the nuclear and coal sectors.

The discussions among the participants addressed a wide range of issues, with considerable attention paid to impact of energy technologies, including renewable energy ones, on the environment and the country's economy. Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA, spoke about the environmental impact assessment process and wind power development in Ukraine.

http://uwea.com.ua/en/news/entry/konferenciya-can-regiona-vostochnoj-evropy-kavkaza-i-centralnoj-azii/

ENERGY WEEK UZBEKISTAN 2019

On 25-27 September 2019 Tashkent hosted a three-day international investment conference "Energy Week Uzbekistan 2019" organised by the British company Invest in Network. The UWEA was an official information partner of the event. Energy Week Uzbekistan was held under the auspices of the Government of Uzbekistan to demonstrate prospects of the country's energy sector and unlock the potential of international cooperation. More than 250 representatives of the energy community from different European and Asian countries participated in the conference including representatives of international renewable energy companies and financial institutions.

The Round table dedicated to international cooperation and incentives aimed at further development of the Central Asian electricity markets once again convincingly demonstrated that only the state support of RES favourable for investors could make possible a transition from the out-dated fossil fuel-based energy system to a modern RES based energy system. Chairman of the UWEA Board, Vice-President of the WWEA, Andriy Konechenkov called on the national industry associations of Uzbekistan, Kyrgyzstan, Kazakhstan and Tajikistan to join the Global 100%RE platform to accelerate the transition to a carbon-free economy and meet the goals of the Paris Agreement on Climate Change.

Uzbekistan Energy Week 2019 is a significant event in the energy sector of Central Asia and the first independent platform for the renewable energy sector of Uzbekistan in the B2B format.

http://uwea.com.ua/en/news/entry/energeticheskaya-nedelya-uzbekistana-2019/

ENERGY SECTOR OF UKRAINE – EFFECTIVE SECTOR FOR ATTRACTING INVESTMENTS

On 24 September 2019, Kyiv hosted the International Conference "Energy Sector of Ukraine – Effective Sector for Attracting Investments", organized by the Association of Ukrainian and Arab Businessmen and Investors *(AUABI)*.

The conference aimed at supporting the development of renewable energy in Ukraine, attracting additional investment in the national energy sector and promoting Ukraine as a country actively developing renewable energies at the national and international levels, brought together project owners, managers and representatives of the energy industry and banking sector of Ukraine and the Arab countries, energy experts. At the invitation of AUABI Chairman Mohammad Salim Alotti, the conference was attended by a delegation of Arab investors headed by Mohammad Al Faanache, Secretary General of the Commission on Renewable Energy of the Arab Republics. Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA, presented wind energy development prospects in Ukraine.

http://uwea.com.ua/en/news/entry/energetika-ukrainy-effektivnaya-sfera-privlecheniya-investicij/

WWEC2019: NEW SOLUTIONS TO LARGE-SCALE INTEGRATION OF WIND POWER

On 25-27 November 2019, Rio de Janeiro, Brazil, hosted the 18th World Wind Energy Conference WWEC 2019, an annual international conference of the World Wind Energy Association, with more than 300 participants from 20 countries discussing all aspects of wind power utilization.

The main theme of the conference "Large-Scale Integration of Wind Power" pointed at one of the most important challenges for the mankind. Manifold solutions and approaches for a large-scale integration of renewable energy and eventually a 100% renewable energy supply were presented and discussed during 3 days of intensive work.

UWEA representatives – Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA and Galyna Schmidt, Member of the UWEA Board, presented the current state of wind energy in Ukraine and highlighted main wind power achievements and barriers to the further successful development of the sector. Information about the wind energy sector in Ukraine attracted great interest among the delegates.

On November 24, 2019, a day prior to the 3-day conference, the General Assembly of the World Wind Energy Association was held. Andriy Konechenkov, Chairman of the UWEA Board, was elected Vice-President of the World Wind Energy Association for the third time.

Hon. Peter Elliot Rae, Chairman of the Renewable Energy Alliance *(REN Alliance)* and Australian Senator who represented the Liberal Party for the stated of Tasmania in 1967-1986, was re-elected for a third two-year term as WWEA President.

The new WWEA Board includes representatives from Germany, Denmark, China, Pakistan, Turkey, Egypt, Japan, India, Mali, Australia and Ukraine.

http://uwea.com.ua/en/news/entry/wwec2019-novye-resheniya-dlya-shirokomasshtabnoj-integracii-vetroenergetiki/

SUSTAINABLE ENERGY FORUM OF EASTERN EUROPE

On October 16-17, 2019, the 11th Sustainable Energy Forum of Eastern Europe was successfully held in Kyiv. Around 600 delegates from 37 countries including owners, top managers of the international companies, investors and enterprisers involved in sustainable energy sector, discussed legal and financial issues of business development in renewable energy and energy efficiency, "green tariff" and auctions, new electricity market model in Ukraine, distributed generation, energy storage technologies and smart energy systems. The Ukrainian Wind Energy Association was the Forum partner.

The three-day SEF's programme included separate EF conferences devoted to solar energy market *(SEF Solar)*, energy efficiency *(SEF Energy Efficiency)* and bioenergy and biofuel *(SEF Bioenergy)*.

The third annual ceremony SEF Awards 2019 was held as part of the Forum. The Ukrainian company Vindkraft Ukraine was recognized as the best company in the category "Best Wind Energy Project – Eastern Europe".

http://uwea.com.ua/en/news/entry/forum-ustojchivoj-energetiki-vostochnoj-evropy/

3.4. COOPERATION WITH GOVERNMENT AGENCIES AND INTERNATIONAL ORGANISATIONS

THE NINTH SESSION OF THE ASSEMBLY OF IRENA

On 11 January 2019 heads of state and governments, more than 120 ministers and representatives from 160 countries gathered in Abu Dhabi, United Arab Emirates, at the ninth session of the Assembly of International Renewable Energy Agency to engage in high-level discussions to accelerate renewable energy deployment in support of the sustainable development goals and global climate objectives. In his welcome address, Director-General of IRENA Adnan Z. Amin announced that four new members joined IRENA – Canada, Paraguay, Chad, Turkmenistan and 23 countries – in the accession process.

The Ukrainian delegation was represented by Taras Tokarsky, Deputy Minister of Regional Development, Construction and Housing and Utility Services of Ukraine; Yuriy Polurez, Ambassador Extraordinary and Plenipotentiary of Ukraine to the United Arab Emirates and Permanent Representative of Ukraine to the International Renewable Energy Agency; Sergiy Savchuk, Chairman of the State Agency on Energy Efficiency and Energy Saving of Ukraine, representatives of the SAEE and the Ukrainian Embassy in the UAE. The Ukrainian delegation also included Andriy Konechenkov, Chairman of the UWEA Board and Vice-President of the WWEA. For the first time Ruslana *(Ruslana Lyzhychko),* the Ambassador for Global RE100%, participated in the IRENA Assembly.

http://uwea.com.ua/en/news/entry/ix-sessiya-assamblei-mezhdunarodnogo-agentstva-po-vozobnovlyaemym-istochnik/

AUCTION SYSTEM FOR RENEWABLE ENERGY IN UKRAINE

Ukraine's transition to "green" auctions and IRENA's expert recommendations on this issue were discussed by the participants of the international conference "Auction System for Renewable Energy Support in Ukraine" held on February 21, 2019 in the Verkhovna Rada of Ukraine at the initiative of the Verkhovna Rada Committee on Fuel and Energy Complex, Nuclear Policy and Nuclear Safety of Ukraine, the State Agency on Energy Efficiency and Energy Saving of Ukraine and IRENA with the support of the United Kingdom Effective Governance Foundation.

Experts from IRENA, the European Commission, EBRD and IFC emphasized the advantages of the auction system and shared the outcomes of the auctions conducted in different countries around the world. Ukrainian MPs, representatives of the Ministry of Energy and Coal Industry of Ukraine *(currently – Ministry of Energy and Environmental Protection of Ukraine),* the SAEE, Energy Community Secretariat, the Ukrainian Wind Energy Association, IRENA, EBRD, IFC, the European Commission and energy market experts from other countries discussed key aspects of implementing the RE auction system in Ukraine and its impact on the investment climate in the country.

http://uwea.com.ua/en/news/entry/aukcionnaya-sistema-podderzhki-vozobnovlyaemoj-elektroenergetiki-v-ukraine/

SECOND UKRAINIAN NDC METHODOLOGICAL WORKSHOP

Second Ukrainian NDC Methodological Workshop organized by the Climate Change and Ozone Layer Protection Department of the Ministry of Ecology and Natural Resources of Ukraine *(currently – Ministry of Energy and Environmental Protection)* within the framework of the EBRD project "Support to the Government of Ukraine on Updating its Nationally Determined Contribution" funded by the Swedish International Development Agency, was held on 13 March 2019 in Kyiv. The Institute for Economics and Forecasting of the National Academy of Sciences of Ukraine implemented the project.

The workshop participants discussed the objectives, methodological aspects and modelling tools for the GHG emissions scenarios in Ukraine by sectors. In particular, the participants paid special attention to modelling tolls for such sectors as: energy and industrial processes, land use, agriculture and forestry, and the waste sector.

A working group, consisting of representatives of governmental, professional and non-governmental organizations including the UWEA, business, regional and municipal associations, scientists, experts, international donors and financial organizations, was set up to develop a new NDC for Ukraine.

http://uwea.com.ua/en/news/entry/metodologicheskij-seminar-po-razrabotke-vtorogo-nacionalno-opredelennogo-vz/

DENMARK'S EXPERIENCE IN FORECASTING AND BALANCING WIND AND SOLAR ELECTRICITY

From 18 to 20 March 2019, the Ukrainian delegation composed of representatives from the Ministry of Energy and Coal Industry of Ukraine *(currently – Ministry of Energy and Environmental Protection of Ukraine),* NPC Ukrenergo and the Ukrainian Wind Energy Association studied the Denmark's experience in balancing the energy system, security of supply and demand management. A series of workshops and meetings were held in Denmark within the framework of bilateral intergovernmental cooperation under the Agreement on Development and Co-operation of the Ukraine-Denmark Energy Centre concluded by the Ministry of Foreign Affairs of the Kingdom of Denmark and the Ministry of Energy and Coal Industry of Ukraine.

The Ukrainian delegation headed by Olga Buslavets, Head of the Ukrainian-Danish Energy Centre, General Director of the Energy Markets Directorate of the Ministry of Energy and Coal Industry of Ukraine, visited the head office of the Danish system operator Energinet.DK. to learn about how the Dispatching Center works, the functioning of electricity markets, primarily day-ahead, intra-day and balancing markets. Particular attention was paid to the forecasting and balancing of wind and solar electricity, as well as to the use of appropriate methods and technologies to ensure the security of electricity supply.

http://uwea.com.ua/en/news/entry/uspeshnyj-opyt-danii-v-prognozirovanii-i-balansirovanii-proizvodstva-vetrov/

ACCELERATED AND EFFECTIVE IMPLEMENTATION OF THE LAW OF UKRAINE ON ELECTRICITY MARKET

A scientific and practical conference "Implementation of the Law of Ukraine On the Electricity Market" was held in Slavske, Lviv region, from 12 March to 15 March 2019.

The issues discussed at the conference included the current status of the energy sector and energy market of Ukraine, information support and monitoring of electricity supply security in the new electricity market, forecast and daily power production etc. Timely transition to a new model of the Ukrainian electricity market and elimination of barriers that delay this process was also a focus of discussion.

The conference participants noted the urgent need for legal regulation of issues related to the electricity supply security monitoring and the introduction of balancing and ancillary services markets. A special working group was set up to prepare proposals and comments to the relevant ministries and institutions to expedite the implementation of the Law "On Electricity Market". Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA, was elected to this working group.

http://uwea.com.ua/en/news/entry/vnedrenie-zakona-ukrainy-o-rynke-elektricheskoj-energii/

3.5. NATIONAL RE SECTOR EVENTS

MANAGING A RENEWABLE ENERGY PROJECT

On 25 February 2019 a workshop "Managing a Renewable Energy Project: Construction and Commissioning on Time, on Budget and on Project Design" initiated by Sayenko Kharenko was successfully held in Kyiv. Partners of the event included the Ukrainian Wind Energy Association and other professional associations.

Around 150 participants including representatives of professional RE associations, investors, suppliers of RE equipment and energy companies discussed issues related to construction and commissioning phases of the project. Speakers included Andriy Konechenkov, Chairman of the UWEA; Philip Lysyuk, Director of Wind Energy LLC; Olga Nikolayenko, Consultant on customs issues of Service ZED LLC; Yevhen Oliinyk, Member of the Board of the Bioenergy Association of Ukraine; Maryna Hritsyshyna, Counsel at Sayenko Kharenko law firm and Member of the UWEA Board; Valentyna Beliakova, Director of TIU Canada; Volodymyr Yaremko, Counsel at Sayenko Kharenko law firm and others.

http://uwea.com.ua/en/news/entry/upravlenie-proektom-vozobnovlyaemoj-energetiki/

HARDTALK: RENEWABLES IN DETAILS

On 28 March 2019, the RE industry event Hardtalk: Renewables in Details was held in Kyiv. Leading energy experts spoke about implementation of the new electricity market in Ukraine and the readiness of the national electricity regulator and the market operators for the new state support mechanism for renewable energy projects.

Discussions focused primarily on issues related to the new model of the electricity market of Ukraine, concluding pre-PPA and timing of its renegotiation, financial responsibility for imbalances and implementation of auctions. *"With regard to auctions, we should not expect a sharp reduction in the "green" electricity prices since companies will offer prices economically feasible for them"*, said Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA.

"Hardtalk: Renewables in Details" was organised by A7 CONFERENCES jointly with a law firm GOLAW. Ukrainian Wind Energy Association was an information partner.

http://uwea.com.ua/en/news/entry/hardtalk-renewables-in-details-eksperty-rasskazali-o-perspektivah-i-problem/

INTEGRATION OF RENEWABLES INTO THE POWER SYSTEM – CONSTRAINTS OR NEW OPPORTUNITIES

On 16 September 2019 the UWEA held a workshop "Integration of Renewables into the Power System – Constraints or New Opportunities". The event supported by the Ministry of Energy and Environmental Protection of Ukraine brought together renewable energy industry associations, representatives from a wide range of investors, law and technical companies, wind energy specialists and experts to discuss modern RE technologies including hydrogen and biogas to balance variable renewables such as wind and solar.

The workshop was held with an active participation of the Finnish corporation Wärtsilä – a global leader in advanced technologies and complete lifecycle

solutions for energy system integration. The event partners include: UDP Renewables, Acciona, DTEK Renewables, Energy Association "Ukrainian Hydrogen Council" and Sayenko Kharenko as a legal partner. More than 180 participants registered for the event.

Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA, noted the record renewable energy development in Ukraine, first of all in solar and wind power sectors; Ihor Petryk, Senior Market Development Manager at Wärtsilä, talked about the possibilities of optimization of the Ukrainian grid; Oleksandr Riepkin, President of the Ukrainain Hydrogen Council, focused on the prospects of integrating "green" hydrogen into the grid and Georgiy Geletukha, Chairman of the Board of the Bioenergy Association of Ukraine – on possibililties for bioenergy development in Ukraine.

http://uwea.com.ua/en/news/entry/integraciya-vie-v-energosistemu-ogranicheniya-ili-novye-vozmozhnosti/

IV ECOFORUM 2019

On 20 September 2019, specialists and heads of environmental and legal departments of industrial enterprises, top managers responsible for environmental aspects, leading experts of ECOBUSINESS magazine and Public Union Professional Association of Ecologists of Ukraine gathered in Odesa to discuss recent changes in the Ukrainian environmental legislation and new market rules. Public Union Ukrainian Wind Energy Association was the event partner.

In her presentation "On Environment Impact Assessment of Wind Energy Projects" Galyna Shmidt, Member of the UWEA Board, stressed the importance of ensuring the transparency of project solutions and the balance of environmental and economic interests: *"Public consultation is a key aspect of the environmental impact assessment procedure".*

http://uwea.com.ua/en/news/entry/iv-vseukrainskij-ecoforum-2019/

ROUND TABLE ENERGY STORAGE: DO WE NEED A LAW?

As part of the IV International Innovation Market Forum a round table "Energy Storage: do we need a law?" was held on 7 November 2020. A draft bill "Amendments to the Law of Ukraine "On the Electricity Market of Ukraine" in terms of ensuring the operation of energy storage systems in the new electricity market" presented by representatives of the Ministry of Energy and Environmental Protection of Ukraine was the focus of attention and discussion among participants.

All participants unanimously stressed the immediate necessity and importance of adopting a law aimed at ensuring development of a modern energy system and modern market models. However, design of the future law, incentives for relevant market players who wish to install energy storage systems, their competitiveness in the balancing and ancillary services markets require further processing. The participants of the round table also agreed that energy storage systems development should be considered in line with the general strategy of energy system development in Ukraine.

"I believe that range of topics we discuss today should be a bit broader. It is not just only about energy storage, its technologies and relevant legislation. It covers the issues of generation, balancing, accumulation and distribution, that is, the functioning of the entire energy system", said Mykola Savchuk, Head of the Department of Small and Medium-sized Wind Turbines of the UWEA, a member of the UWEA Board, who moderated the round table.

NEW CHALLENGES FOR UKRAINIAN RENEWABLE ENERGY

On 15 October 2019 a Round Table "New Challenges for Ukrainian Renewable Energy in Case of the Change of Terms of State Support" was held in Kyiv, organized by the Ukrainian Renewable Energy Association in partnership with the UWEA.

The event was aimed at experience exchange, discussions on ways of improving the long-term sustainability of the renewable energy industry and preventing a situation of crisis in the RE market of Ukraine. International energy experts, Ukrainian MPs, representatives of Ukrainian and international banks, market stakeholders, attended the event.

http://uwea.com.ua/en/news/entry/novye-vyzovy-dlya-vozobnovlyaemoj-energetiki-v-ukraine/

UWEA MEMBERS PRESENTED THEIR EXPERIENCE IN UKRAINE'S WIND POWER SECTOR

Workshop "Development of RES in the Current Electricity Market of Ukraine", organized by the UWEA was held on November 6, 2019 within the framework of the XII International Specialized Exhibition "Energy Efficiency. Renewable Energy – 2019".

During the event, UWEA member-companies shared their ideas, achievements and experience in the field of RES under the current market conditions. Workshop participants heard presentations by the representatives from MCL Group of Companies, Deutsche WindGuard Consulting GmbH, Meganom Ukraine LLC, DE Quehenberger Logistics UKR, Sayenko Kharenko, Uniprom LLC, Dentons Europe, GRESA – GROUP LLC.

http://uwea.com.ua/en/news/entry/chleny-uwea-prezentovali-svoj-opyt-raboty-v-vetroenergeticheskom-sektore-uk/

3.6. AWARDS

WINDEUROPE 2019 BEST POSTER REPORT

The power award ceremony traditionally was held on the final day of the WindEurope Conference and Exhibition 2019. Following a review of all 300 posters by the Conference Scientist Committee presided by Stephan Barth, Managing Director of ForWind, on behalf of the European Academy of Wind Energy, a poster report "Construction of Onshore Wind Farms in Ukraine in the Period of Replacement of the Feed-in Tariff by Auctions" prepared by Maryna Hritsyshyna from Sayenko Kharenko, Member of the UWEA Board, jointly with Andriy Konechenkov, Chairman of the

UWEA Board, Vice-President of the WWEA, and Galyna Shmidt, Member of the UWEA Board, was selected for a poster award in the category "Finance". Maryna Hritsyshyna, was awarded the prize "The Best Poster Report of the Conference WindEurope 2019".

http://uwea.com.ua/en/news/entry/windeurope-2019-chistaya-ekonomika-dlya-vseh-evropejcev/

VINDKRAFT UKRAINE'S GENERAL DIRECTOR WAS AWARDED WITH ECO-OSCAR

More than 50 eco-stakeholders, including governmental officials, business and civil society were awarded with Eco-Oscar prize at the Second Green Forum "Eco-Transformation – 2019". Carl Sturen, General Director of Vindkraft Ukraine LLC, was awarded with Eco–Oscar for his considerable contribution to the successful "green" transformation of Ukraine, promotion of environmentally friendly production and support of eco-specialists.

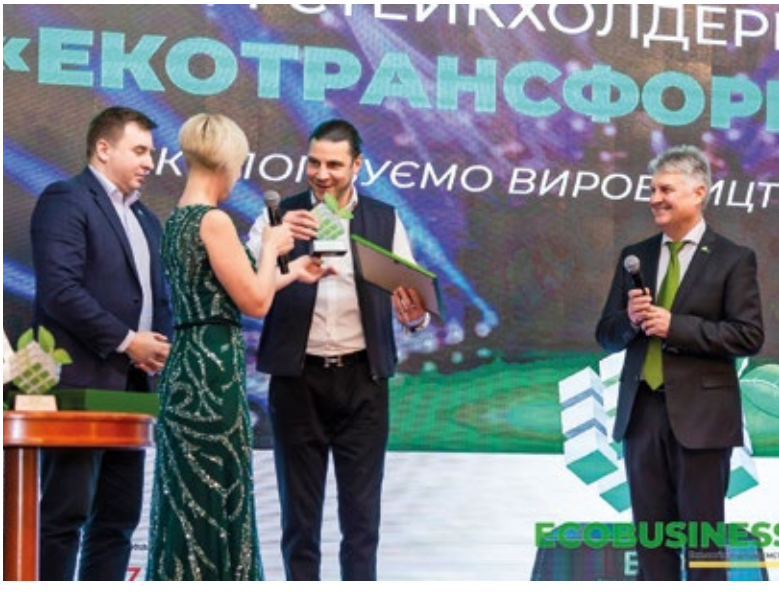
http://uwea.com.ua/en/news/entry/stejkholdery-formiruyuschie-zelenuyu-ekonomiku-nagrazhdeny-eko-oskarami/

WORLD WIND ENERGY AWARD 2019 WAS GIVEN TO THE UWEA BOARD MEMBERS

On 25 November 2019, the 18th World Wind Energy Conference WWEC 2019 was opened in Rio de Janeiro, with more than 300 participants from 20 countries discussing all aspects of wind power utilisation, and a special focus on large-scale integration of wind power.

During the opening session of the 18th World Wind Energy Conference for outstanding achievements in the dissemination of wind energy utilization in Ukraine and worldwide, the World Wind Energy Award 2019 was given to Members of the UWEA Andriy Konechenkov and Galyna Shmidt.

http://uwea.com.ua/en/news/entry/vsemirnaya-vetroenergeticheskaya-nagrada-2019-vruchena-chlenam-pravleniya-u/



3.7. GROWING PARTNERSHIP

In 2019, UWEA actively cooperated with state institutions, national and foreign professional associations. In order to expand the partnership aimed at developing sustainable power sector in Ukraine a number of memorandums on partnership and cooperation were concluded by the UWEA.

MEMORANDUM ON PARTNERSHIP AND COOPERATION WITH THE SCIENTIFIC AND TECHNICAL ASSOCIATION OF POWER ELECTRICAL ENGINEERS OF UKRAINE

Memorandum on Partnership and Cooperation between the Public Organisation Scientific and Technical Association of Power Electrical Engineers of Ukraine and the Public Union Ukrainian Wind Energy Association was signed at the Tenth Ukrainian Energy Forum on 28 February 2019.

Parties identified the following areas of mutual cooperation:

- exchange of information on promoting wind, solar and other RES technologies;
- exchange of information, experience and materials on attracting investments, creation of favourable investment climate;
- identification of topical problems, barriers to implementation of wind energy technologies in Ukraine, wind power generation and potential solutions;
- co-organization and joint participation in forums, seminars, business meetings on investment activities in the energy sector of Ukraine.

http://uwea.com.ua/en/news/entry/memorandum-o-partnerstve-i-sotrudnichestve-s-nauchno-tehnicheskim-soyuzom-e/

MEMORANDUM ON COOPERATION AGAINST ENVIRONMENTAL MANIPULATIONS SIGNED BY HEADS OF 15 UKRAINIAN ASSOCIATIONS

On 12 July 2019, a briefing "Manipulations with Environmental Information: Price for Ukraine" initiated by the Professional Association of Environmentalists of Ukraine was held at the Ukrainian News Information Agency. The briefing brought together the heads of 15 associations of Ukraine active in such sectors of Ukrainian economy as energy, metallurgy and agriculture and water management. A Memorandum on Cooperation against environmental manipulations was signed between the heads of professional associations to jointly combat environmental manipulations that lead to the closure or refusal to launch projects strategically important for the Ukrainian economy.

"Manipulations with environmental information aimed at reaching some political or commercial purposes have recently become a dangerous trend in the world. Unfortunately, we see the same trend in Ukraine. Today we have set up alliance of professional associations. I hope it will simplify unveiling such "environmentalists" and contacting the relevant authorities to stop their illegal activities", stressed Andriy Konechenkov, Chairman of the UWEA Board and Vice-President of the WWEA, at the Signing Ceremony for the Memorandum.

http://uwea.com.ua/en/news/entry/memorandum-o-sotrudnichestve-protiv-ekologicheskih-manipulyacij-podpisali-g/

MEMORANDUM ON ESTABLISHING WIND TURBINES MANUFACTURE IN UKRAINE

On 18 July, 2019 in Kyiv, the State Enterprise Production Association Yuzhny Machine-Building Plant named after A.M. Makarov, the State Enterprise Plant Electrotyazhmash, WIND FARM LLC and the German company Fuhrländer International Sustainable Business Management signed a Memorandum on establishing wind turbine manufacture in Ukraine.

"Further cooperation of the parties will give a powerful impetus to the development of the Ukrainian machine-building industry, create hundreds of new jobs, promote investments in the Dinetsk region and strengthen energy independence of Ukraine", Andriy Konechenkov, Chairman of the UWEA Board, Vice-President of the WWEA, is convinced.

http://uwea.com.ua/en/news/entry/sovmestnyj-memorandum-po-organizacii-proizvodstva-vetroturbin-v-ukraine/

MEMORANDUM ON COOPERATION AND PARTNERSHIP WITH ASSOCIATION OF UKRAINIAN AND ARAB BUSINESSMEN AND INVESTORS

On September 24, 2019, in the framework of the International Conference "Energy Sector of Ukraine – Effective Sector for Attracting Investments" the UWEA and the Association of Ukrainian and Arab Businessmen and Investors concluded a Memorandum on Cooperation and Partnership between the two organizations in the field of development of renewable energy in Ukraine, attracting additional investment in the national energy sector and promoting Ukraine as a country with active development of renewable energies at the national and international levels.

The first meeting of the Working Group on monitoring natural complexes of wind farm's territories, Novotroitska WPP, Kherson region, May 21, 2019.

UWEA MEMBERS


GOLDWIND


SENVION
wind energy solutions


Fuhrländer
ВИНДТЕХНОЛОДЖИ


GÜRİŞ
1958


Scientific
Production Complex
"Ecoresource & Monitoring"


WIND ENERGY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DEUTSCHE
WINDGUARD


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NEWLAW FIRM


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ENGINEERING COMPANY PROFESSOR KATZENBACH


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1828


Global Capital Finance


EUROUKRWIND

Guidance

For renewable projects in Ukraine:

New scheme of support and new electricity market

SAYENKO KHARENKO
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UWEA

Ukrainian Wind Energy Agency is your reliable information partner in the global wind industry

Українське вітроенергетичне агентство – Ваш надійний інформаційний партнер у світовій вітроенергетичній промисловості

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GREEN ENERGY TRANSITION

I INTERNATIONAL FORUM 2020

5-6 October 2020
CEC PARKOVY
Kyiv, Ukraine

ORGANIZERS:

UWEA
UKRAINIAN WIND ENERGY ASSOCIATION

SOLAR ENERGY ASSOCIATION of UKRAINE

UKRAINIAN HYDROGEN COUNCIL